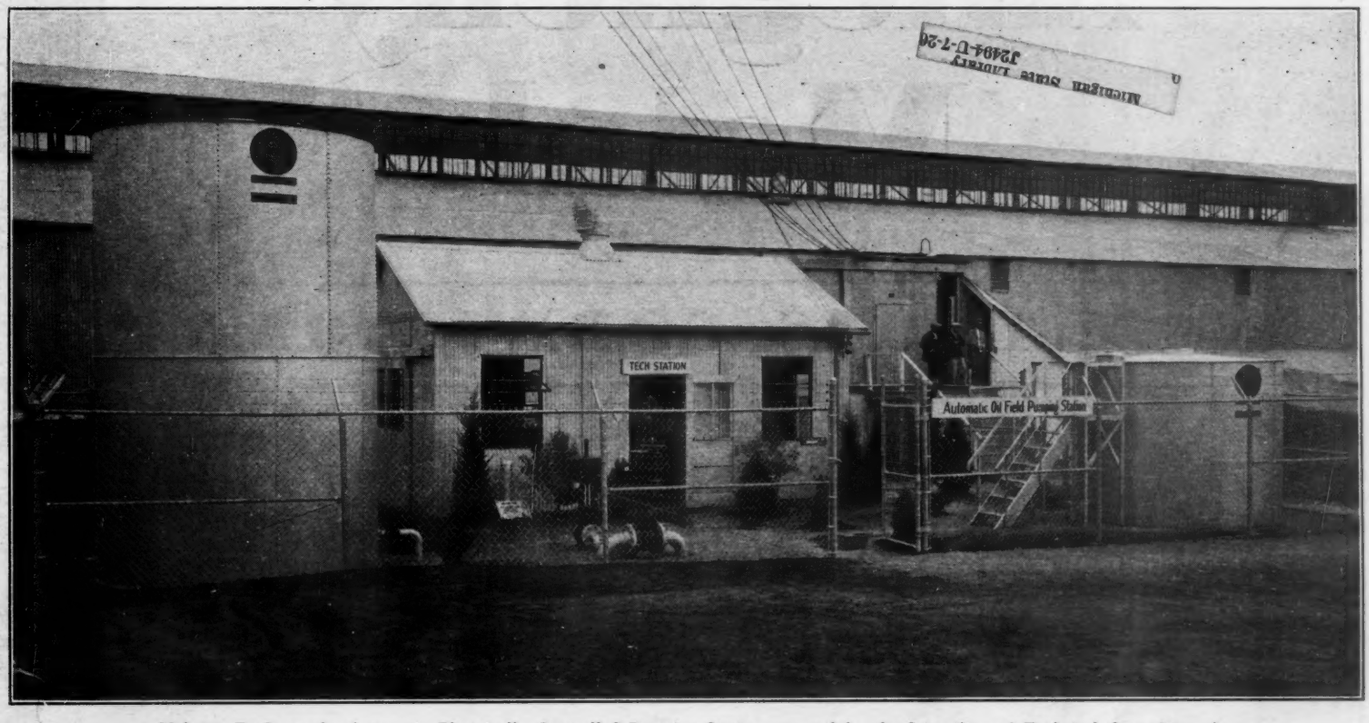
665.505
9039
v.28 no-26

15 Cents

The OIL and GAS JOURNAL

PRODUCING REFINING ENGINEERING MARKETING

Published Every Thursday TULSA, OKLAHOMA, NOVEMBER 14, 1929 $6.00 a Year



Maloney Tanks at the Automatic Electrically Controlled Pumping Station arranged by the Scientific and Technical Committee of the International Petroleum Exposition.

The easiest way to have money is to conserve what you already possess

Maloney A. P. I. Bolted Steel Tanks conform to A.P.I. dimensional standards and carry the official A.P.I. monogram.

MADE OF

Thousands of leases today are not equipped to save the oil and gas produced.

We are manufacturing a simple remedy in our Vapor-Pressure Tanks, which take care of the vapor and pressure accumulated in the tanks by reason of the expansion due to atmospheric and other conditions, and turn it back into oil.

Watt did the same in making steam a power. We are simply advocating the additional money power to be had by using correct tankage.

"Alone in Quality"

MALONEY TANK MFG. CO.

Tulsa, Oklahoma

Distributers at All Principal Petroleum Points

MALONEY

MALONEY PATENTED BOLTED COPPER-STEEL TANKS

Advertisers' Index on Page 33 Table of Contents on Page 34

Allegheny Metal

CONTROLS CORROSION

IS being used for Tubes in Cracking Stills, Heat Exchangers, Condensers and other equipment subject to hot gases, acids and other corrosive elements.

Write for Bulletin "A"

Warehouse Stocks

JOS. T. RYERSON & SON, INC.

Chicago Cleveland Milwaukee St. Louis Cincinnati
Detroit Buffalo Boston Jersey City

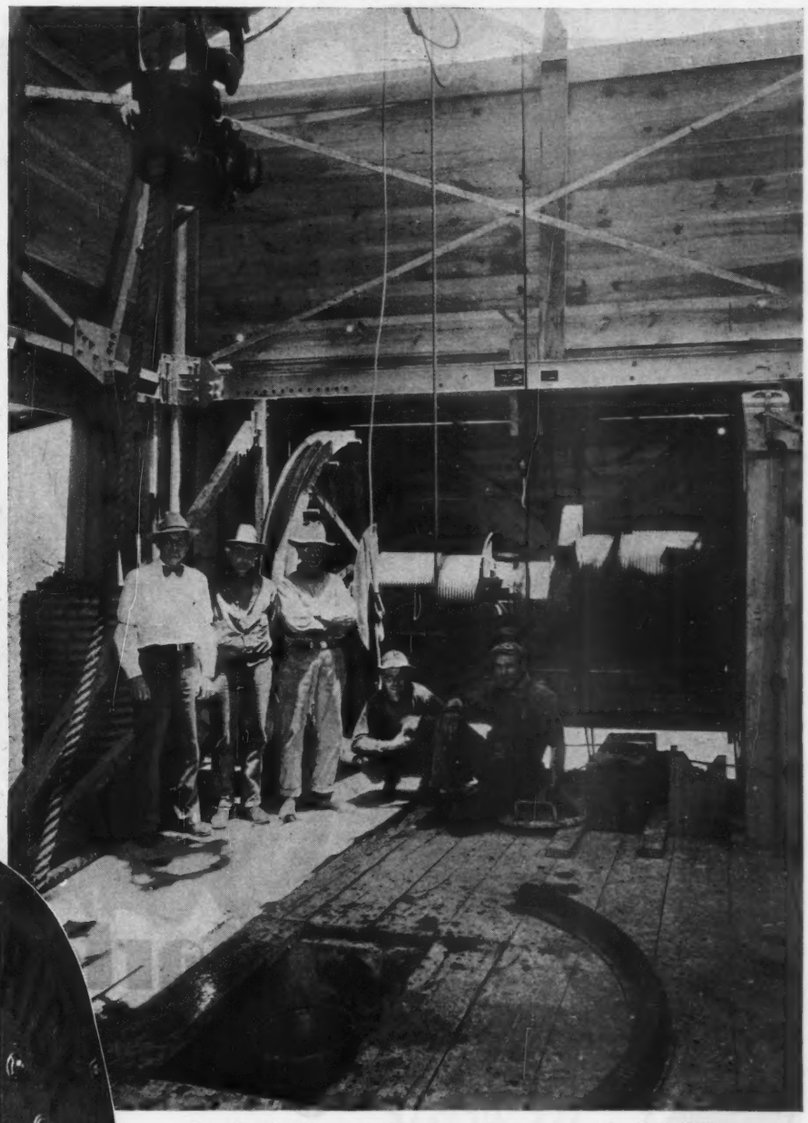
ALLEGHENY STEEL COMPANY
General Offices and Works
BRACKENRIDGE, PA.

New York Buffalo Cleveland Chicago Detroit
Milwaukee St. Louis Los Angeles

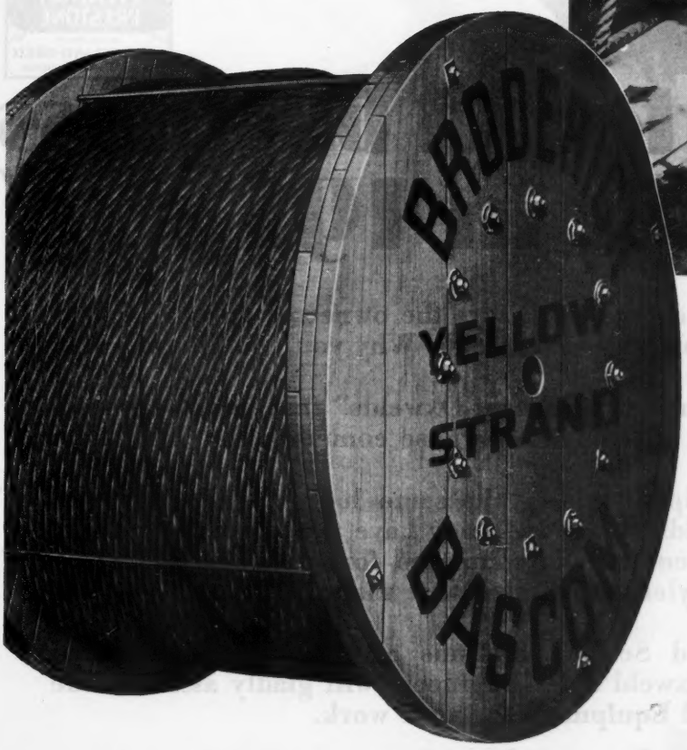
Allegheny

Sheets for Automobile Bodies • Metallic Furniture • Deep Draws Allegheny Metal • Ascoloy • Electrical Sheets • Steel Castings • Boiler Tubes • Pipe

The Old Stand-by *for* Cable Tool Drilling



Lone Star Gas Company's Storm Lease No. 1. Left to right: R. G. Miller, Republic Supply Co., H. C. Kelly, Supt., Lone Star Gas Co., J. L. Sarver, Drilling Contractor, G. C. Rowe, Tool Dresser, U. C. Morris, Driller.



Since wire line succeeded manila, B & B Steel Drilling Lines have been prime favorites for cable tool outfits. The crew says: "They've got everything—they're springy, they're flexible, they spool pretty, they're easy to handle." The cost accounting department sees another great virtue—the lines *last*. Why shouldn't they?

All wire is drawn to our own specifications and tested four ways before being laid up into rope on machinery designed for our exclusive use. Different fields require different lines. We make them all. Patentsteel, Extra Strong Cast Steel and Cast Steel Cable Tool Drilling Lines, Sand Lines and Pumping Lines; also powerful Yellow Strand Rotary Drilling Lines. Distributors in all fields.

Ask for Catalog K-2

BRODERICK & BASCOM ROPE CO., St. Louis

Factories: St. Louis and Seattle

Warehouses: New York and Portland, Oreg.

BRODERICK & BASCOM DRILLING LINES

N 837

The Oil and Gas Journal, issued weekly by The Petroleum Publishing Company, 114-116 West Second Street, Tulsa, Oklahoma. Subscription price $6.00 a year; 15 cents a copy. Entered as second-class mail matter December 15, 1911, at the post office at Tulsa, Okla., under the Act of March 3, 1879.

"We started in business together in 1913 . . ."

". . . this 'Veteran Oxweld' and me", says the owner of an old Oxweld blowpipe, "and we're still making great welds. Why you couldn't *buy* that 'pipe off o' me."

This is one of thousands of "Veteran Oxwelds" that have won similar soft spots in the hearts of the fellows whose company they have kept for long periods of time.

Today Oxweld blowpipes embody the same low-pressure principle that these "Veteran Oxwelds" embody. They have the added advantage, however, of Oxweld's sixteen years of continued forging ahead, zealously building the best oxy-acetylene apparatus that manufacturing ingenuity can produce.

Oxweld Branches and Service Stations are strategically located throughout the country. Oxweld Sales Engineers will gladly assist in the proper selection of Oxweld Equipment for your work.

OXWELD

WELDING AND CUTTING APPARATUS AND SUPPLIES

OXWELD ACETYLENE COMPANY

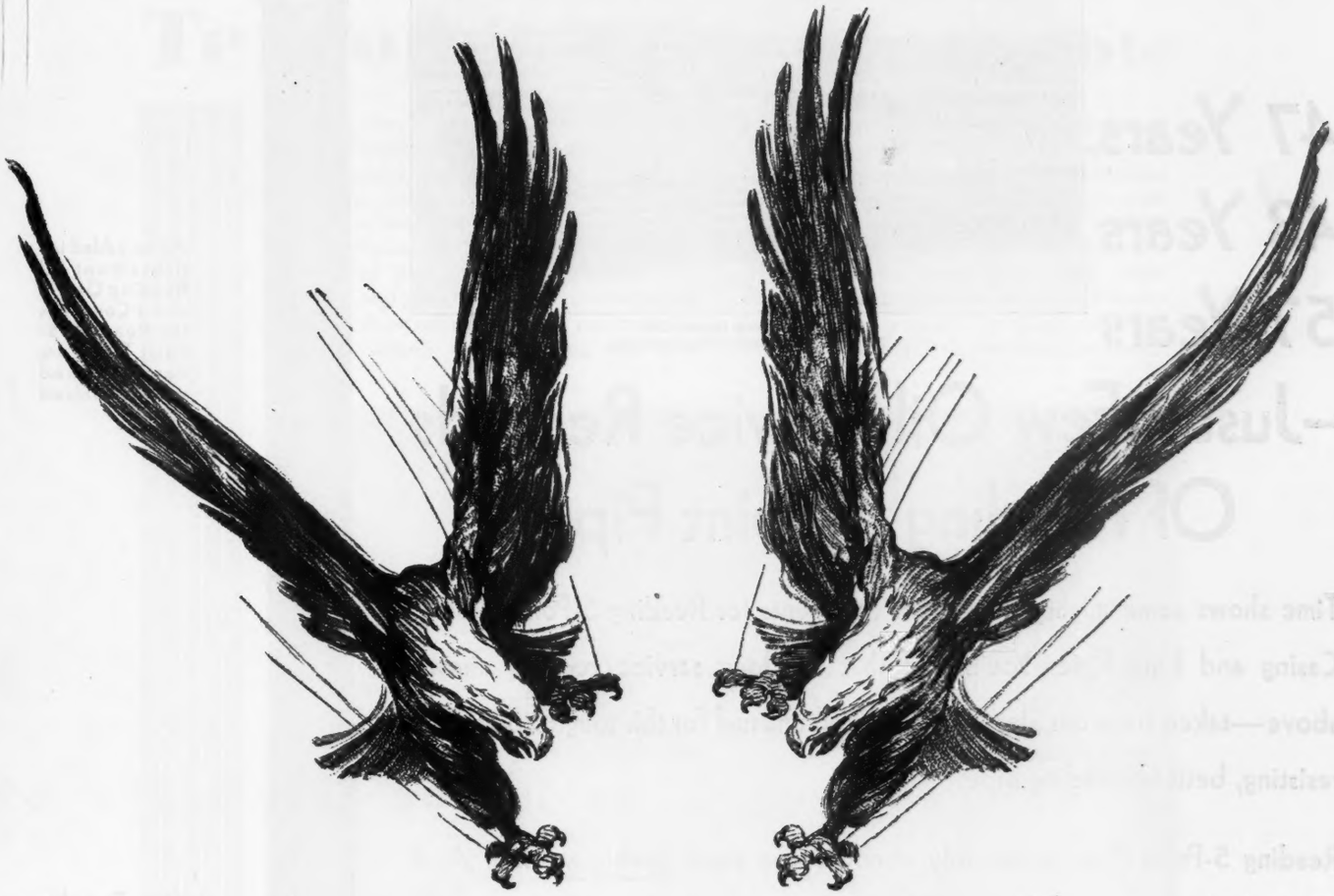
Unit of Union Carbide and Carbon Corporation

NEW YORK Carbide and Carbon Bldg. UCC CHICAGO Carbide and Carbon Bldg.

SAN FRANCISCO Adam Grant Building

STOCKS IN 38 CITIES

Saving Time and Labor with EAGLE Sublimed Litharge



Goes into solution faster!

Reason number one for using Eagle Sublimed Litharge: due to its extremely small particle size—ten times the specific surface of regular Litharge—it goes into solution faster, thus effecting a saving of time. A generous free sample, sent on your request, will quickly demonstrate this advantage.

Stays in suspension—

Reason number two: it stays in suspension, keeping the agitator air lines free. Excess settles out in a fluffy, easily-agitated mass, not caking on the tank bottom. Saves labor as well as time. Same price as our regular Refiner's Litharge. *The Eagle-Picher Lead Company, Chicago, Joplin, Cincinnati.*

REG. U.S. PAT. OFF.

EAGLE *Sublimed* LITHARGE

Made by the makers of

EAGLE OIL REFINER'S LITHARGE

Ready for the job at Bowlegs, Okla.
Reading Genuine Puddled Wrought Iron Pipe

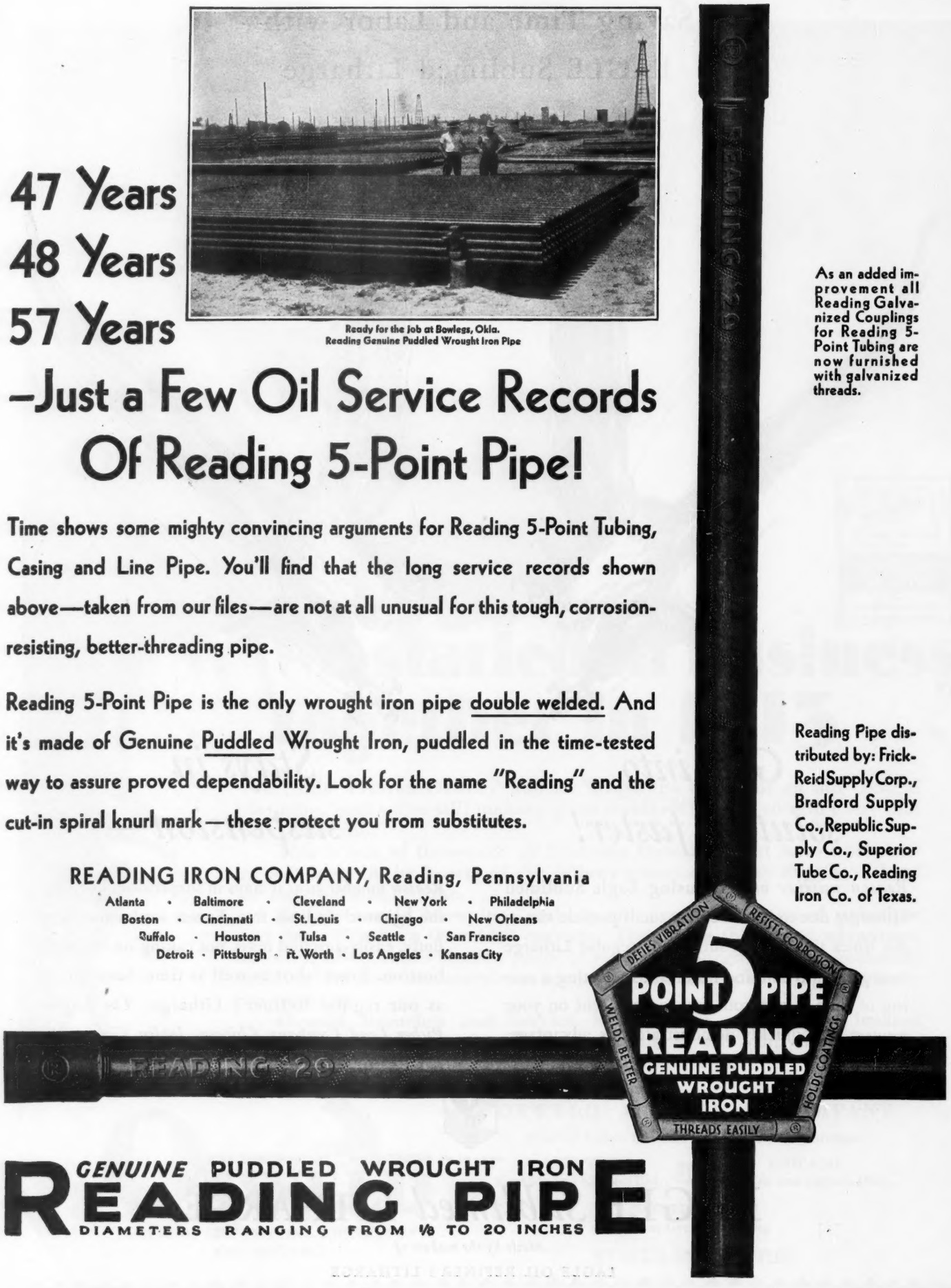
47 Years
48 Years
57 Years
—Just a Few Oil Service Records Of Reading 5-Point Pipe!

Time shows some mighty convincing arguments for Reading 5-Point Tubing, Casing and Line Pipe. You'll find that the long service records shown above—taken from our files—are not at all unusual for this tough, corrosion-resisting, better-threading pipe.

Reading 5-Point Pipe is the only wrought iron pipe double welded. And it's made of Genuine Puddled Wrought Iron, puddled in the time-tested way to assure proved dependability. Look for the name "Reading" and the cut-in spiral knurl mark—these protect you from substitutes.

READING IRON COMPANY, Reading, Pennsylvania

Atlanta · Baltimore · Cleveland · New York · Philadelphia
Boston · Cincinnati · St. Louis · Chicago · New Orleans
Buffalo · Houston · Tulsa · Seattle · San Francisco
Detroit · Pittsburgh · Ft. Worth · Los Angeles · Kansas City



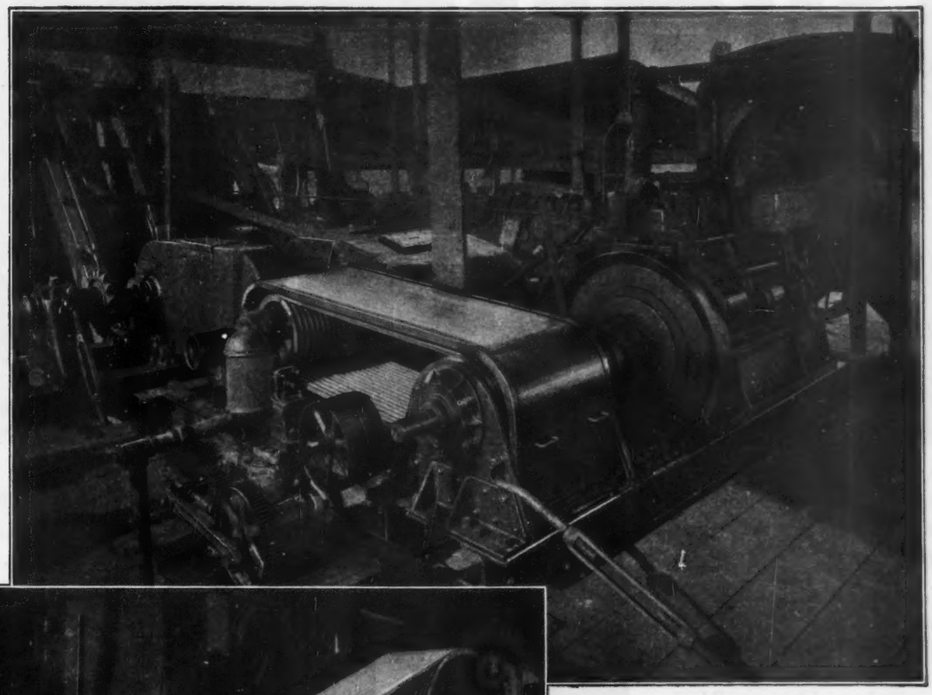
As an added improvement all Reading Galvanized Couplings for Reading 5-Point Tubing are now furnished with galvanized threads.

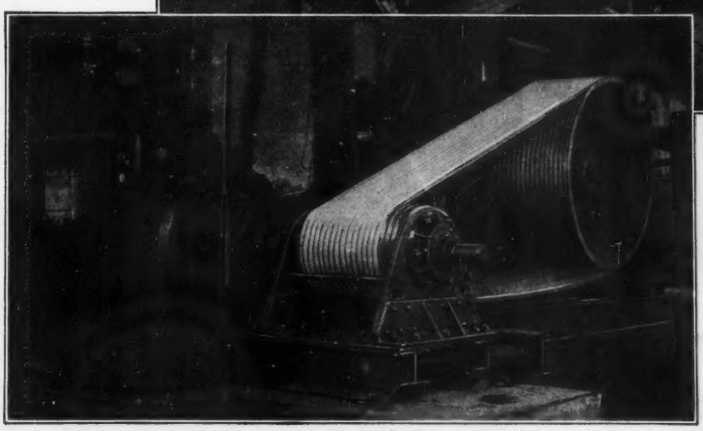
Reading Pipe distributed by: Frick-Reid Supply Corp., Bradford Supply Co., Republic Supply Co., Superior Tube Co., Reading Iron Co. of Texas.

GENUINE PUDDLED WROUGHT IRON
READING PIPE
DIAMETERS RANGING FROM ⅛ TO 20 INCHES

Texropes made it possible

Again the Texrope Drive has proved its dependability to transmit power economically under severe operating conditions. Texropes helped make possible the new combination cable tool and rotary drilling unit designed by the C. F. Camp Company for Mead Brothers, of Oklahoma. This flexible and positive short center drive permitted close coupling of the motor to the reverse clutch for operating the draw works. The slush pumps are also driven through Texrope Drives. There are many qualities about Texrope Drives that make them especially well fitted for driving oil well equipment. Texropes provide a cushioning effect between the driver and the driven machine protecting both from shocks. They will not slip under heavy loads. They require no lubrication or dressing and very little care or adjustment.



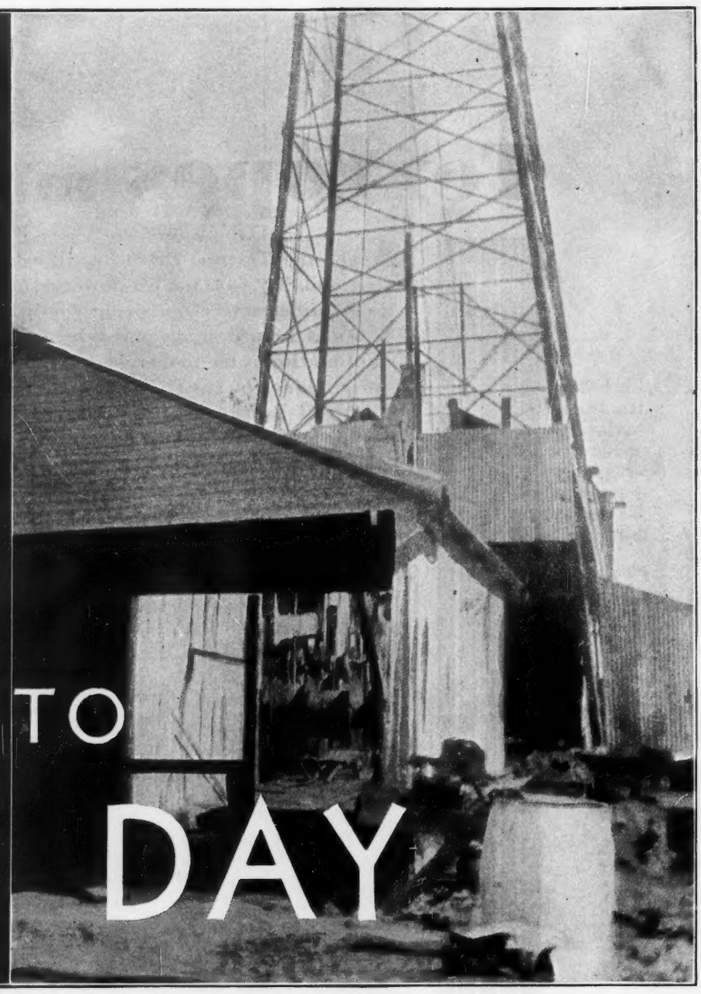


Texropes have been widely used on slush pumps, pipe line pumps, single and double reduction units, and on other oil field equipment requiring a positive and flexible drive needing but little attention. Texrope Drives for standard requirements are carried in stock at important oil field centers.

Allis-Chalmers Mfg. Co.
Milwaukee, Wis.

ALLIS-CHALMERS TEXROPE DRIVES

TURNING NIGHT INTO DAY

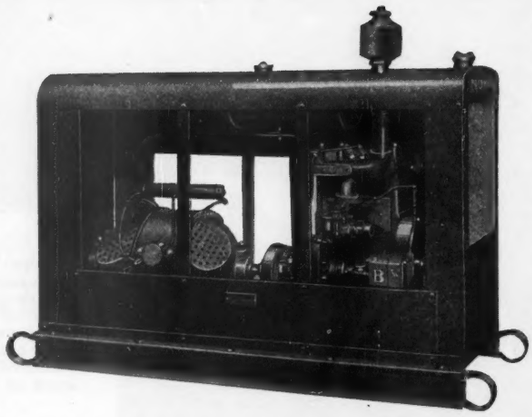


Drilling Rigs can be kept working as efficiently throughout the night as during the day.

For the Novo Flud-Lite Lighting Unit provides clear, unfailing, flickerless light all night long. And it is built with plenty of surplus power to operate grinders, blowers, 2½″ to 3″ pressure pumps and other auxiliary machinery.

Novo Flud-Lite Lighting Units are built especially for oil field work.

The standard Westinghouse Generator is powered with the famous Novo Rollr Engine—with Timken Roller Bearings on crank and drive shafts—a simple engineering answer to Novo's lower gas consumption and freedom from repairs and replacements.



One quarter turn, right hand, is all that's needed to start the Novo Flud-Lite Generator

Engine speed is automatically controlled to within 5% and voltage is held constant to within 3 volts. Flickering and burned out bulbs, common to ordinary lighting outfits, are eliminated.

And the complete unit is compactly arranged within a steel lock-up house—for ready portability.

Built in sizes of from 1¾ K.W. to 5 K.W. Write for complete information, prices and details on the new Novo Flud-Lite Generator.

NOVO ENGINE COMPANY
240 Porter Street, Lansing, Michigan
CLARENCE E. BEMENT, Vice-Pres. and Gen. Mgr.

NOVO
Flud-Lite Lighting Units

Sold and Serviced by National Supply Company

A LETTER FROM HARRY G. NYE

TO THE OIL MEN OF THE U. S. A.

"SOMETHING SERIOUS ABOUT OLD DOC NYE"

FELLOW CITIZENS:

This is serious as the fellow on the 24th floor said when he found he had stepped through a window instead of a door.

This letter, I mean. It's as serious as a third offense, or a funeral, or an after-dinner speech, or something.

I want you to stay with me and read her clear through to the bitter end. I want to talk to you real serious about No. 50.

No. 50 is the name of the new "LIGHTWEIGHT CHAMPION," the most powerful lightweight portable pipe threading machine ever offered the trade.

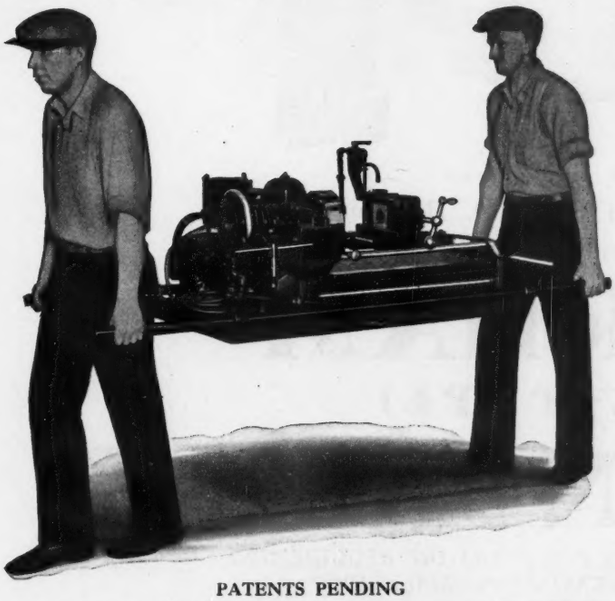
Of course, being Nye made, it would be. We have an annoying habit around this plant of making things that way.

If Nye-built, you know it is the best. The name Nye stamped on anything certainly saves you a lot of running around.

There are some things where something else might do. But buying a machine like this you can't afford to take a chance.

You know what to take for a cold—if you can get it—but when it's something serious, you go to a specialist.

Buying a portable pipe threading machine is an important matter. It's a time to call in the pipe tool specialist, Old Doc Nye.



PATENTS PENDING

"THE LIGHTWEIGHT CHAMPION"

THREADS, CUTS OFF AND REAMS
CAPACITY ½ TO 2 INCHES

Briefly, No. 50 threads, cuts off and reams ½ to 2 inches in size faster and easier than any other lightweight machine.

It has a dozen special features, any one of which would make you pick the Nye machine in preference to any other.

Worm drive — Timken roller bearings — two speeds — self-centering guide — safety device — there's not enough space to tell you.

Buy yourself a portable, by all means; and by all means buy yourself a *Nye* portable, No. 50, the "LIGHTWEIGHT CHAMPION!"

Price $299.00—Dies extra.

HARRY G. NYE
(Old Doc)

Otherwise Known As

The Nye Tool & Machine Works
4120-30 Fullerton Avenue Chicago, Ill.

Copyright, 1929, by Harry G. Nye All rights reserved

"In the near future cracking stills will not be equipped with rolled-in tubes"

THIS bold statement is the thought expressed by many Petroleum Engineers during their visit to the International Petroleum Exposition at Tulsa, where the Stockham Fantz Return Bend was shown publicly for the first time. Keep pace with present developments in cracking still equipment and communicate with our Petroleum Division for additional information.

See us at the National Exposition of Power and Mechanical Engineering at New York

December 2nd to 7th
Booths 556 and 557.

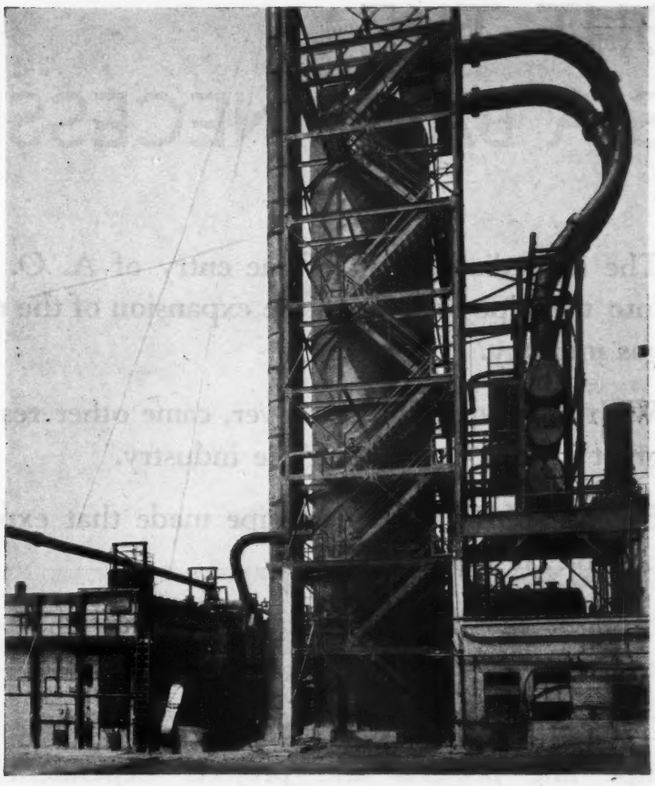
Patents applied for in the United States and in Argentina, Canada, Colombia, Dutch East Indies, England, France, Germany, Holland, India, Italy, Japan, Mexico, Persia, Peru, Poland, Rumania, Trinidad, Venezuela, Australia, Dutch West Indies and Cuba.

Inquiries will receive prompt attention

STOCKHAM PIPE & FITTINGS CO., *Birmingham, Ala.*
Boston, New York, Philadelphia, Chicago, Detroit, Houston, Los Angeles.

STOCKHAM
(FANTZ-TYPE)
RETURN BEND

THERE IS A STOCKHAM FITTING FOR EVERY OIL REQUIREMENT
ELECTRIC CAST STEEL—CAST IRON—MALLEABLE



Vacuum Distilling Units

The vacuum distilling unit, a general view of which is shown above, was designed and erected, ready for operation by the Foster Wheeler Corporation.

The equipment includes vacuum tower; tube still (shown at left); heat exchangers and final condensers, located above the pump house; sectional air preheater and the necessary pumps, instruments, etc. The Foster air preheater, at the right of the tube still, preheats the air used for combustion in the tube still.

The tower continuously recovers to specification, gas oil, pressable paraffin distillate and cylinder stock as overhead products.

The special type Weir control—included in Foster Wheeler distillation units — in combination with internal stripping sections, permits the meeting of rigid flash and viscosity specifications for varying market requirements.

FOSTER WHEELER CORPORATION
165 Broadway, New York, N. Y.
Branches in Principal Oil Centers

Foreign Associates:
Foster Wheeler Limited; London, England.
Societe Anonyme Foster Wheeler; Paris, France.
Foster Wheeler Limited; Toronto-Montreal-Vancouver, Canada.

FOSTER WHEELER

IT BROUGHT THE MILLIONS A BASIC NECESSITY

The immediate result of the entry of A. O. Smith into the pipe business is the expansion of the natural gas industry.

With that expansion, however, came other results of great interest far beyond the industry.

Because SMITHWelded Pipe made that expansion possible, it ALSO:

Brought the millions a basic necessity—heat—in a more convenient and economical form.

Brought quicker returns to thousands of investors in pipe line projects and projects dependent upon pipe lines.

Increased the business of all manufacturers of equipment utilized in pipe line construction and operation or consumption of gas as a fuel.

Stepped up steel mill production to new levels and made a new fuel available to the manufacturing industries.

Transformed a great natural resource from a waste to a utility for the millions.

In an ever widening circle it brought more business, more profits, more employment, more comfort and enjoyment of life far beyond the limits of the industry that it serves.

SMITHWELDED

A. O. SMITH CORPORATION

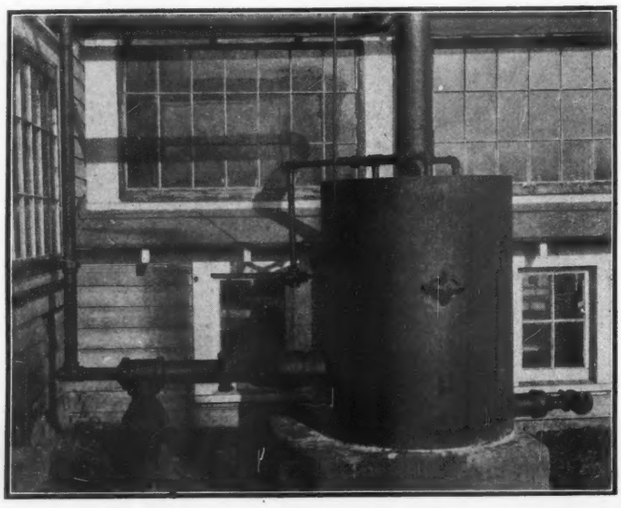
Oil & Gas Field Products Division

LINE PIPE

General Offices: Milwaukee, Wis.

District Offices at: New York • Tulsa • Houston • Los Angeles

—adjust it to work as you want it—



Since the lubricant in Barco Lubricated Plug Valves is not depended upon to relieve the pressure of the plug in the body, any degree of ease of operation is obtainable simply by adjusting the packing gland. The lubricant is only for preventing wear and to insure easy turning at all times.

Another labor-saving feature of this valve is the retainer ring (see cross-section cut) which prevents the plug from blowing out in the event it is found necessary to repack the valve under line pressure. Sudden shocks do not unseat the valve.

Barco Valves outlast the pipe lines in which they are installed, and maintenance is negligible. Ask for our latest catalog, containing valuable valve data.

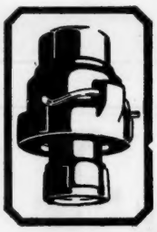
Upper picture: Barco Valves on tank used to remove scale from gas lines. They clean themselves each time they are turned.

Lower picture: Cross-section of flange end Barco Plug Valve.

Barco Manufacturing Company
1801 Winnemac Avenue, Chicago, Illinois

Agents:
Vinson-Canter Co., Tulsa, Oklahoma
M. N. Dannenbaum Co., Houston, Texas
The Steam Supply & Rubber Co., Seattle, Washington
Greene Brothers, Wichita Falls, Texas
Herbert Wolcott, El Paso, Texas
Petroleum Equipment Co., Los Angeles, California

BARCO



Valves and Joints

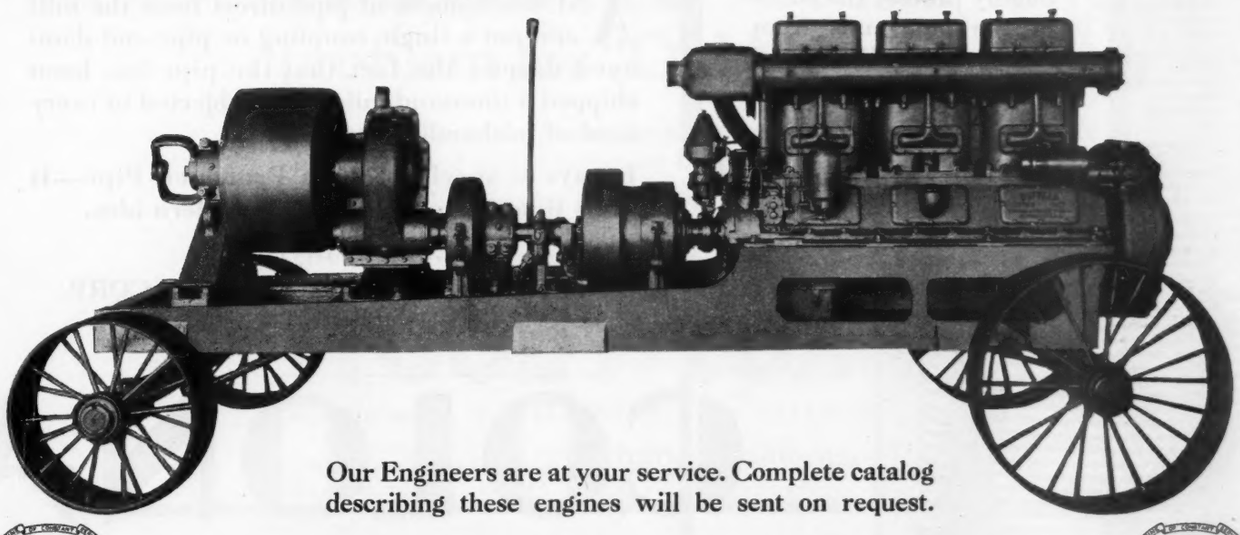
O&GJ 11-14 Gray

Buffalo "DR"

SIX CYLINDER

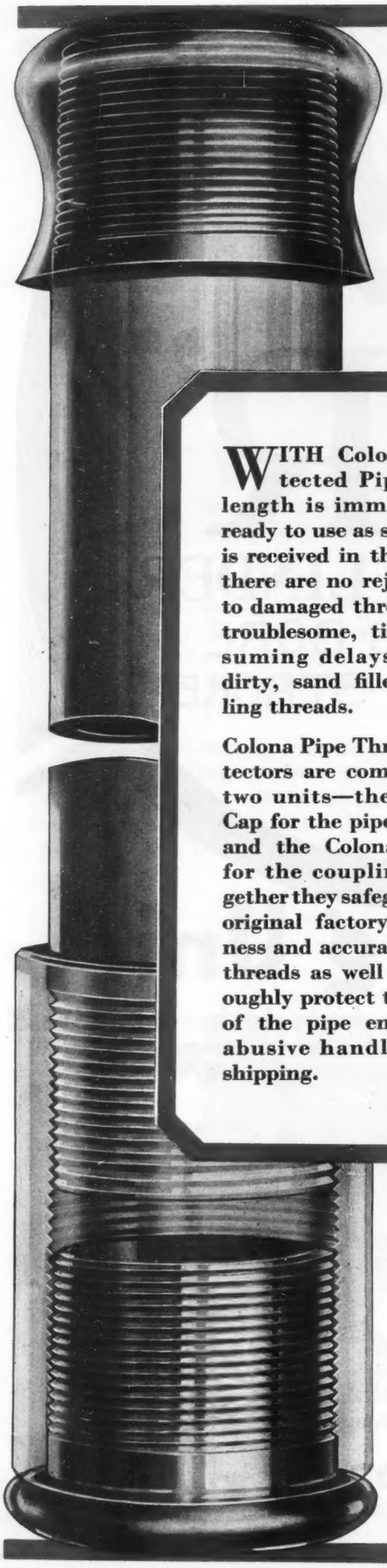
125 HP 5 7/8" BORE
7" STROKE

Buffalo Drilling Unit



Our Engineers are at your service. Complete catalog describing these engines will be sent on request.

BUFFALO GASOLENE MOTOR CO.
1282-1292 Niagara St. · · Buffalo, N. Y.



WITH Colona Protected Pipe every length is immediately ready to use as soon as it is received in the field—there are no rejects due to damaged threads—no troublesome, time consuming delays due to dirty, sand filled coupling threads.

Colona Pipe Thread Protectors are composed of two units—the Colona Cap for the pipe threads and the Colona Nipple for the couplings. Together they safeguard the original factory cleanliness and accuracy of the threads as well as thoroughly protect the edges of the pipe ends from abusive handling and shipping.

"COME ON BOYS! THE PIPE IS READY TO PUT DOWN"

A NEW shipment of pipe direct from the mill and not a single coupling or pipe end damaged despite the fact that the pipe has been shipped a thousand miles and subjected to every kind of mishandling and abuse.

It pays to specify Colona Protected Pipe—It saves time and expense. It's a modern idea.

COLONA DIVISION
PITTSBURGH SCREW & BOLT CORP.
Pittsburgh, Pa.

¢OLONA
PIPE THREAD PROTECTORS

STOODITE . . . is a tough problem for "Old Man Abrasion"

"Old Man Abrasion" is the greatest enemy to successful drilling. He cuts and wears and makes necessary frequent "pulling" of bits.

STOODITE resists his destructive efforts to an unparalleled degree. It is the hardest known surfacing metal and is easily applied with either the electric arc or the acetylene torch.

Write for full information.

STOODY COMPANY

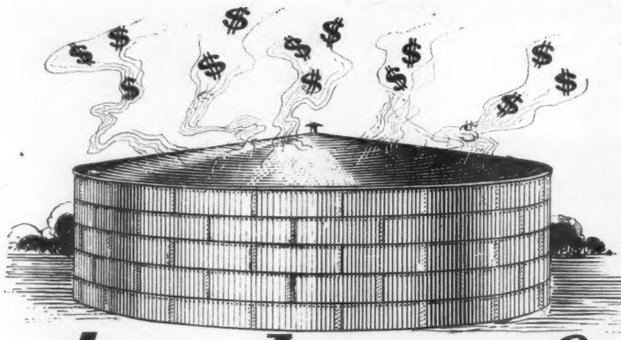
Manufacturers of WELDING ROD • ALLOY STEEL • EQUIPMENT

District Offices Tulsa, Oklahoma New York City

Whittier, California

Mid-Continent Distributors WELDERS SUPPLY COMPANY Dallas Tulsa Houston

DISTRIBUTORS LOCATED IN PRINCIPAL INDUSTRIAL DISTRICTS OF THE WORLD



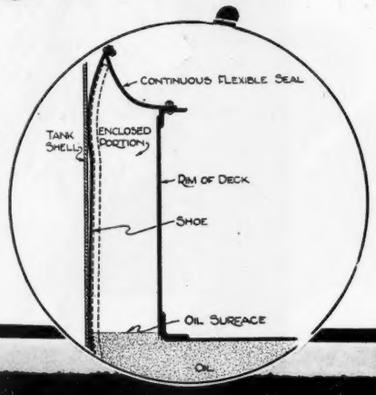
—What air leaky tank roofs cost you!

A floating roof on an oil tank acts like a cork in a bottle. No matter how good the "cork", it must be tight at all times to be effective.

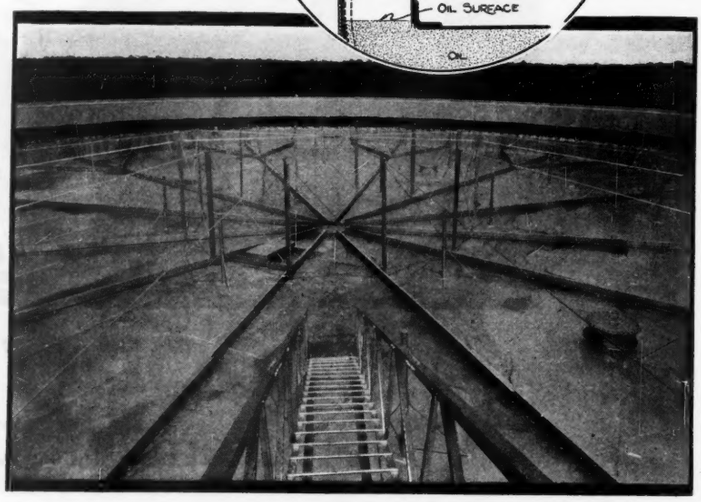
The seal on the Wiggins Floating Roof has a long, sliding contact with the tank shell. It provides an effective seal at all levels, stopping evaporation of the lightest and most valuable fractions of your oil during filling or emptying equally as well as when oil is held in standing storage.

For example: a tank equipped with an ordinary "gas-tight" roof handling 5,000 bbls. of average Mid-Continent crude a day loses 1,810 to 2,310 bbls. a year. This loss is practically eliminated by the Floating Roof, which saves enough to pay for itself in 12 to 18 months.

Wiggins Breather Roofs, by flexing up and down, give you similar savings on standing storage. They permit vapor which forms above the surface of the oil to expand and contract with changes in temperature. Although ordinarily considered primarily because they stop evaporation losses, both roofs provide excellent protection against fire. Write to our nearest office for detailed information or for a list of leading users of Wiggins Roofs.



(In circle): Details of the Wiggins narrow slot seal principle.



View of top of Wiggins Floating Roof on a 55,000-barrel tank at the Humble Oil Company's Webster tank farm. This roof, which rides directly on the oil, provides a seal at all levels and thereby stops evaporation.

CHICAGO BRIDGE & IRON WORKS

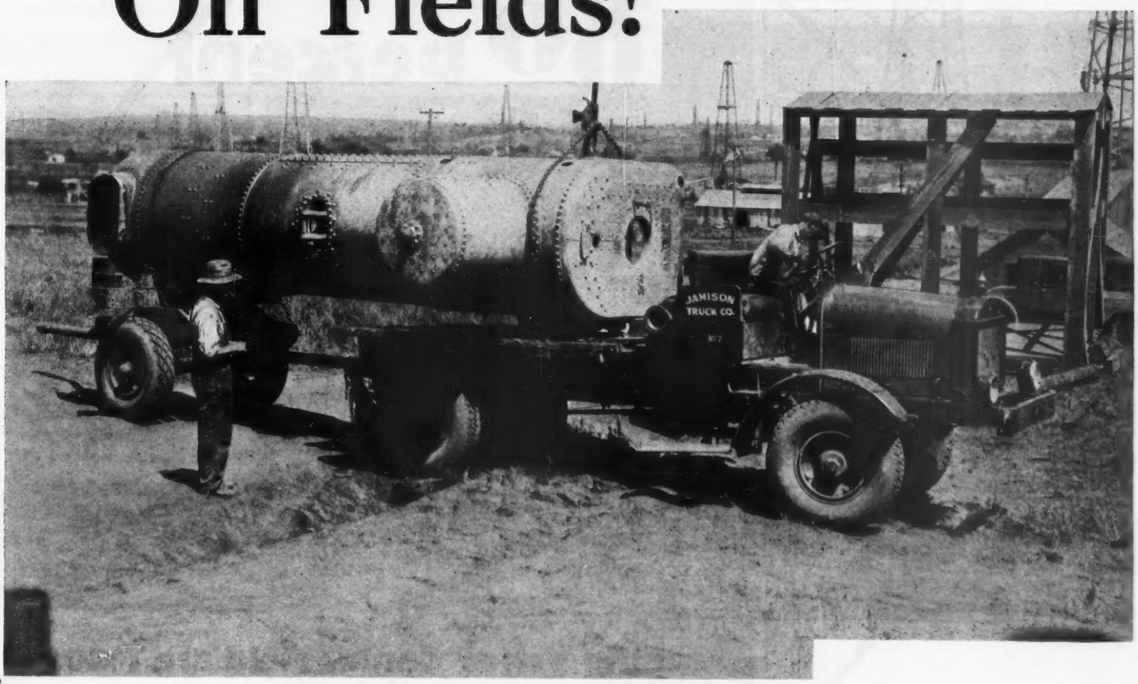
Dallas	3341 Magnolia Bldg.	Atlanta	1054 Healey Building
New York	3147 Hudson Terminal	Boston	1517 Consolidated Gas Bldg.
Cleveland	2204 Union Trust Bldg.	Philadelphia	1615 Jefferson Bldg.
Chicago	2128 Old Colony Bldg.	San Francisco	1054 Rialto Bldg.
Detroit	1514 Lafayette Bldg.	Havana, Cuba	Apartado 2507

STOP EVAPORATION LOSSES

with WIGGINS FLOATING ROOFS

OGJ 11-14 Gray

FWD Trucks are Sure-footed —Haul heavy loads in Oil Fields!



PULLING through the soft — sandy — muddy oil fields under heavy loads has long been the assignment of FWD Trucks. And rightly so—for the FWD is unlike the ordinary truck since *it distributes the load and power to all four wheels.* Naturally it is more adaptable to oil field service.

In the FWD Truck power is transmitted through the propeller shafts, bevel gear drives and full floating axles directly to the spot where it is needed. This is alone an FWD feature. It means better traction — more economical service to you . . . Let our oil field representative give you specific figures on its oil field economy. Write for them today.

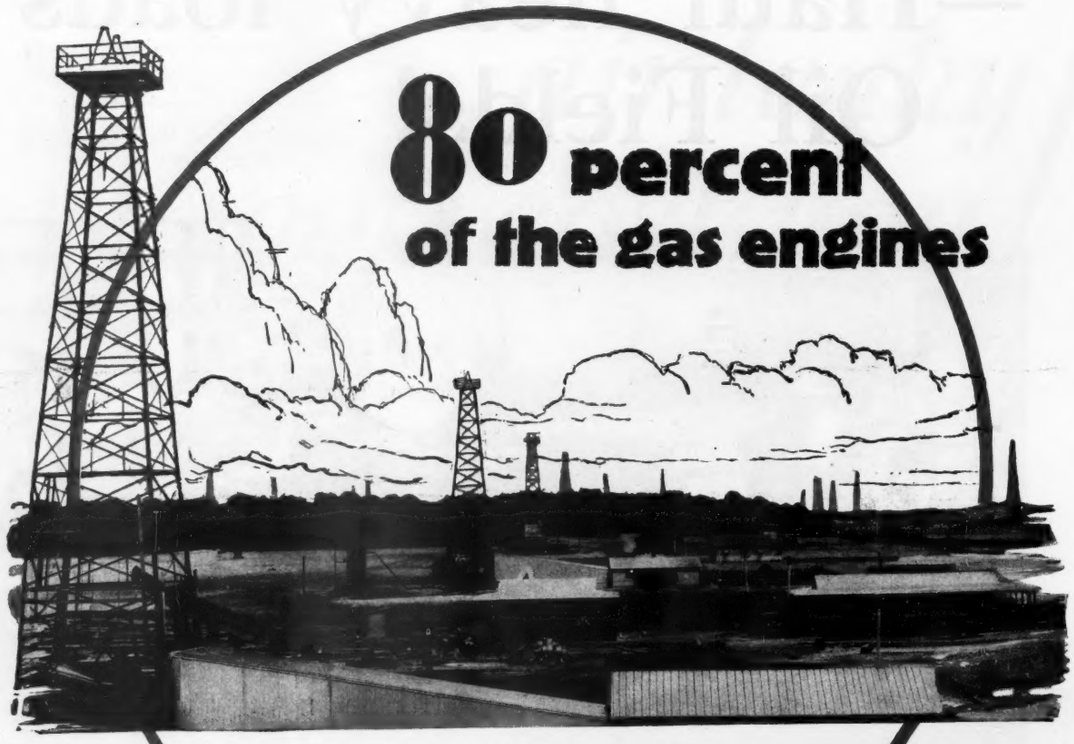
FWD Trucks drive and brake on all four wheels. They are made in sizes from 2 to 10 tons . . . four wheels . . . six wheels and truck tractor.

The Four Wheel Drive Auto Co.
Clintonville, Wisconsin

FWD hauling ten joints of 14 inch pipe from Casper to Ferris. Note the loose ground condition.

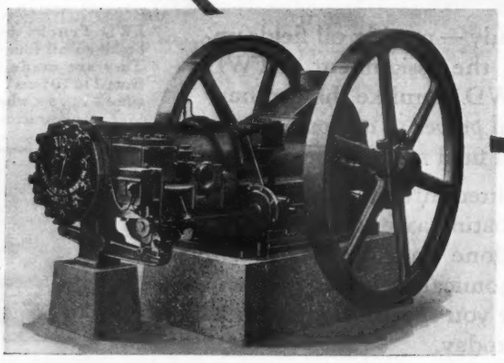
FWD

BACKED BY NATION WIDE SERVICE



80 percent of the gas engines

—at the Valley Center Field are TICOS!



Unique features of the Tico 4 Cycle 25-90 H.P. Gas Engine

Extra long stoke ∿ Easy hand or air starting ∿ All reciprocating parts and governor enclosed oil tight ∿ Patented dash pot insures absolute valve alignment ∿ Two piece cylinder head.

That is proof enough of the preference Tico Engines enjoy among oil men who demand an engine that is easy to start, easy to keep regulated and that's "got the power" they need. Economy of operation is always essential.

Make your next engine purchase a Tico and you'll better appreciate this undisputed preference.

THE TITUSVILLE IRON WORKS CO.
Division of Struthers Wells-Titusville Corporation
TITUSVILLE, PA.

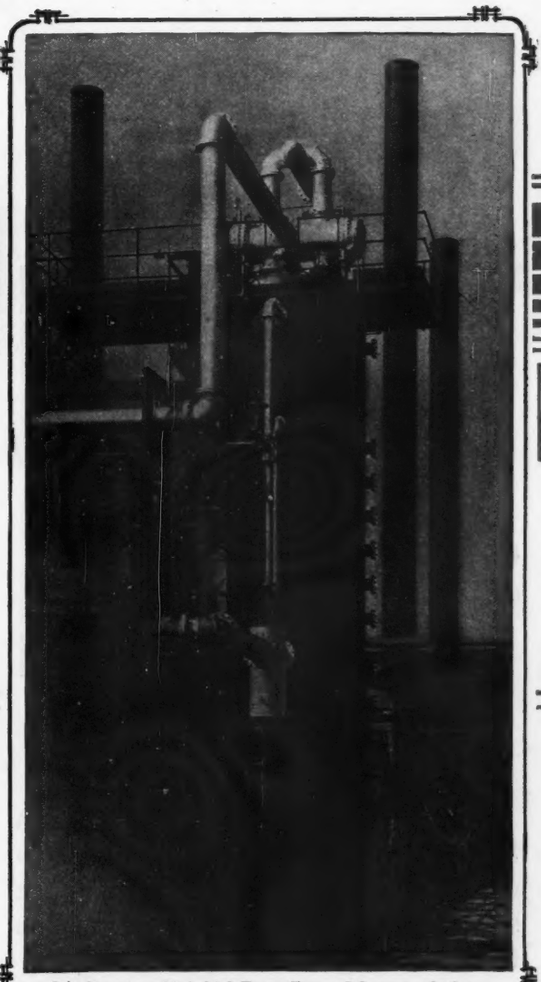
Mid-Continent Office
503 Exchange National Bank Building
Tulsa, Okla.

For California
California Machinery Supply Co.
2449-55 Hunter St.,
Los Angeles, Calif.

TITUSVILLE
OIL FIELD EQUIPMENT

GAS ENGINES—PUMPS—BOILERS—DRILLING RIGS—STEAM ENGINES

TIW-28



8 ft. diameter x 38 ft. high Braun Rerun Column producing aviation gasoline overhead and white spirits bottom.

The PRINCIPLES applied by Braun in solving refinery fractionation problems have been substantiated by the eminently successful results obtained. The purchaser of Braun Bubble Cap fractionating columns is assured that specified products will be made from the time the column is first operated.

C·F·BRAUN & CO.

ALHAMBRA, CALIFORNIA

NEW YORK 120 Broadway · **HOUSTON** Neils Esperson Bldg

TULSA Kennedy Bldg. · **SAN FRANCISCO** Russ Building. · **DALLAS** Republic Bank Bldg

An experienced lover *could* buy his lady friend cheaper flowers than orchids, but he knows that no others are so sure to please, and so certain to be free from regrets.

The experienced oil man feels the same way about his cementing. Although cheaper methods are available he insists on the HALLIBURTON for the same reason that he insists on a reliable and time-tested insurance company.

HALLIBURTON OIL WELL CEMENTING CO.
Duncan, Oklahoma

FOR *Heavy Loads over Rough Roads and Speed!*

THE NEW GOODRICH UNIVERSAL

The New Goodrich Universal Heavy Duty Silvertown Has:

1. An unusually strong carcass of reinforced construction.
2. Rows of "teeth" like the undershot jaw of a bulldog give *added* traction from sides of ruts.
3. Top tread areas equal to assure traction and *even* wear on smooth roads.
4. *Twin* beads fit the tire snugly to rim and help resist "side-roll" wear.
5. The tire toughened *throughout* by the famous Goodrich "water cure."

Photo shows one of B. & A. Drilling Co., Carlsboro, Okla., 100% Goodrich equipped trucks doing the kind of a job ordinary tires could not withstand.

HERE'S a tire with the tenacity and strength of a solid, yet one with the traction and the speed of a pneumatic . . . a Goodrich pneumatic! ▲ The new Goodrich Universal Heavy Duty Silvertown is ideal for oil field special conditions. ▲ Ton for ton and mile for mile . . . on good roads and bad . . . this tire will outwear all others in the oil field.

Goodrich

The B. F. Goodrich Rubber Company, Est. 1870, Akron, Ohio.
Pacific Goodrich Rubber Co., Los Angeles, Calif. In Canada: Canadian Goodrich Company, Kitchener, Ont.

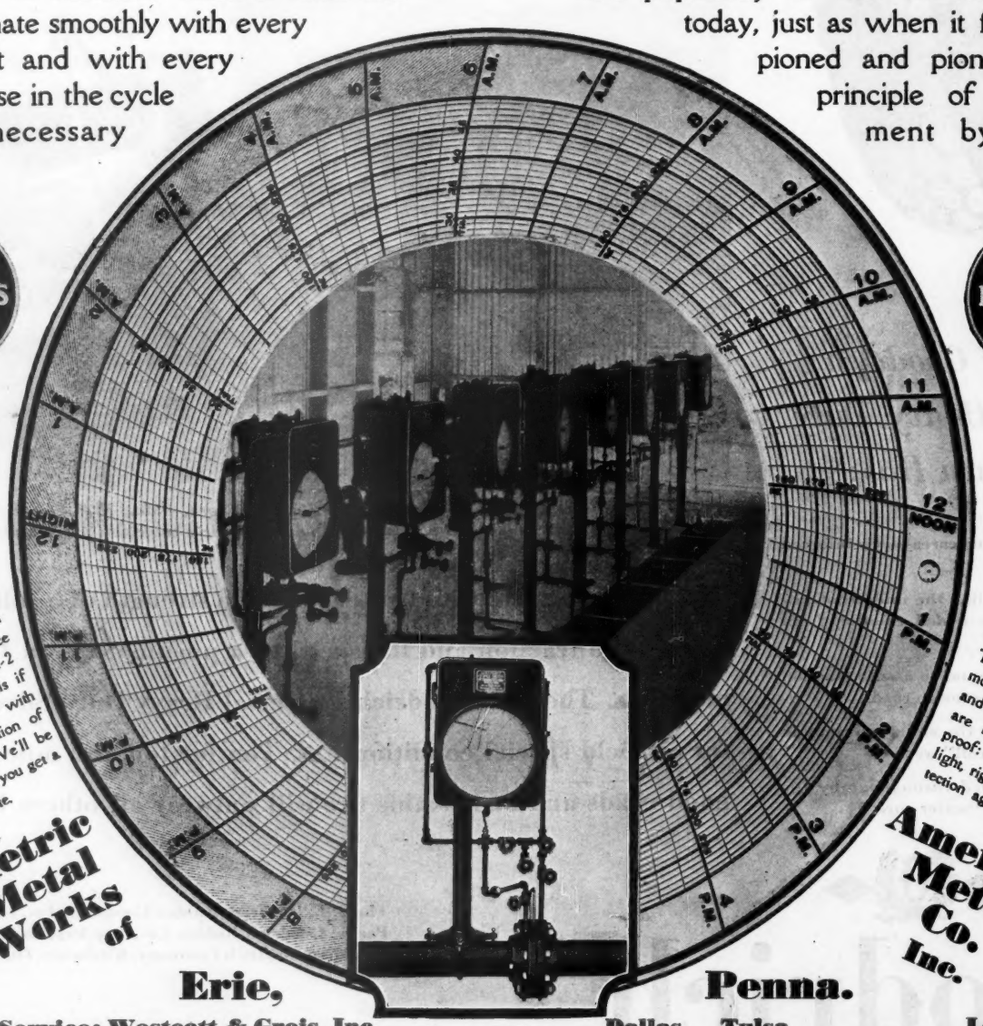
Truck Tires

• • • INSIST ON GOODRICH ON YOUR NEXT TRUCK • • •

Measuring Performance Champion

Differential Mechanism Chart Pen Arms Clock Float Pressure Tube Case Orifice Disc

—every part essential to measurement—is a product of Metric *energy in research which has been matured by tests* that tax its ability to exist in measurement service of all characters. Not only to exist but also to function perfectly. Not only to function without fault but to coordinate smoothly with every other unit and with every other phase in the cycle that is necessary to complete accuracy. In themselves and in their relations, one to another, Metric parts make the measurement of gas a matter of mechanical precision. Reliability in precision and in accuracy is the main reason for the popularity of the Westcott Meter today, just as when it first championed and pioneered the principle of measurement by orifice.



The most recently published Metric data on measurement by orifice Meters is in Bulletin E-2 You should have this if you are concerned with operation or selection of orifice meters. We'll be glad to see that you get a copy—just write.

Metric Metal Works of Erie, Penna.

One of the more recent improvements is the T-Type case shown in this modern installation. This and the new B-Type cases are moisture and dust-proof: made of aluminum, light, rigid, locked for protection against tampering.

American Meter Co. Inc.

Sales Service: Westcott & Greis, Inc. Dallas Tulsa Los Angeles

METRIC orifice METERS

Franklin Valveless Oil and Gas Engines

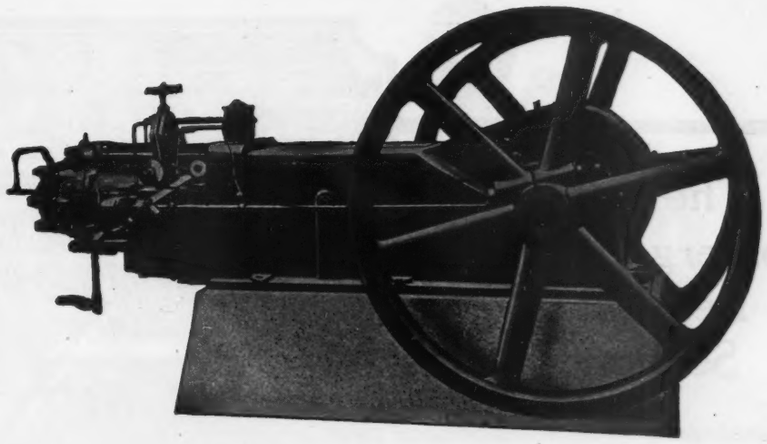
Some of the Franklin OF Good Points

- Enclosed type
- Low fuel consumption
- 100% interchangeability
- Simplicity
- Piston rod is fitted with metallic packing which never needs adjusting or replacing
- Every spring exposed
- Complete simplicity with practically no adjustment
- In case of belt breakage engine automatically stops
- Fuel pump driven by eccentric running in oil bath
- Bearings are removable and reversible
- Only standard threads used. No special wrenches required
- Cylinder has 3 point force feed lubrication
- Balance of lubrication is splash feed
- Pistons are air cooled
- All nuts subject to vibration are castillated and fastened with cotter pins
- Most economical to operate in fuel, lubricant, water and repairs
- Easy to start

Type BG Clutch for Cable Tool Drilling or Pumping

- A vast improvement over the former type of clutches.
- Driven from pulley on engine. Permits the use of a larger diameter pulley and makes possible a slower clutch speed. Operates by hand lever on derrick.
- Construction and design prevent Reverse Clutch Troubles.

PRICE—$1200.00 F.O.B. Franklin, Penna.



Here Is Practical Standardization

The new and improved Franklin Oil Engine, identified as type OF is made in three sizes: 12 x 16 (40 HP) and 13 x 16 (50 HP) and 16 x 16 (80 HP) for drilling, pumping and power.

ALL FRANKLIN VALVELESS 16″ STROKE ENGINES ARE INTERCHANGEABLE ON THE SAME BLOCK

After drilling the well, the operator can install one of the lighter units upon removal of the drilling engine. It fits the same block perfectly.

It is to the operator's interest to see that his drilling contractors use the Franklin since by doing so the cost of a new engine base is eliminated.

Here is practical standardization in which the benefits are mutual.

Send for literature.

Franklin Valveless Engine Company
Franklin, Penna.

PRICES

40 H.P. Type OF Franklin, including water circulating pump and pulley. *$1550 F.O.B. Franklin*

50 H.P. Type OF Franklin, including water circulating pump and pulley. *$2050 F.O.B. Franklin*

80 H.P. Type OF Franklin, including water circulating pump, pulley and air starting equipment. *$3200 F.O.B. Franklin*

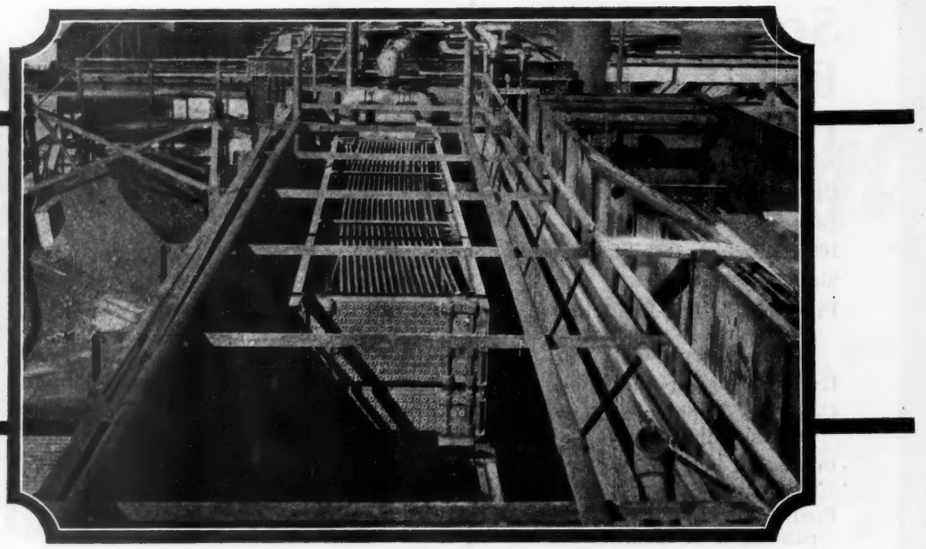
NOTE—Type OF is readily converted into type OG for gas fuelization.

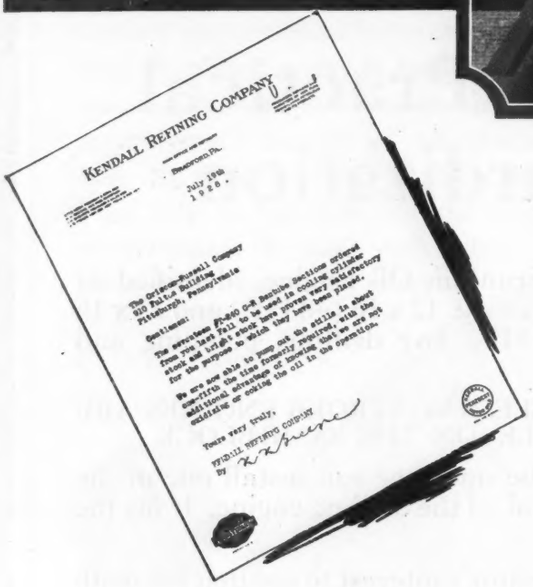
Distributed by

OIL WELL SUPPLY COMPANY

Branches in All Oil Fields

The G-R Submerged Type Bentube Section




KENDALL REFINING COMPANY

July 19th
1926.

The Griscom-Russell Company
930 Fulton Building
Pittsburgh, Pennsylvania

Gentlemen:

The apparatus (Type 460 G-R Bentube Section) ordered from you last fall to be used in cooling cylinder stock was bought with the understanding that it was for the purpose to which they have been placed.

We are able to pump out the still in about one-fifth the time formerly required, with the additional advantage of knowing that we are not oxidizing or coking the oil in the operation.

Yours very truly,
KENDALL REFINING COMPANY
By

"Saves 4/5 of cooling time"

THE remarkable improvement in service effected by G-R Submerged Type Bentube Sections at the Kendall Refining Company's plant is typical of the results obtained wherever these Sections replace other apparatus in tanks for condensing vapors from oils or for cooling residual oil.

No matter how hard, salt or dirty the available water supply may be, the patent construction of the G-R Bentube Section prevents scale from building up to a thickness that would reduce the cooling effect below rating. During operation of the Sections, scale is automatically and continuously flaked off by the changes in curvature of the tubes resulting from changes in temperature, and hand scaling is unnecessary even in severe service.

The Griscom-Russell Engineers will be glad to study your condensing and cooling processes without obligation to you and make recommendations for the application of G-R Submerged Bentube Sections with definite capacity guarantees which will enable you to make accurate comparison with the performance of your present apparatus.

PATENT NOTICE:—The G-R Bentube Section is fully protected by U. S. Patent 1,617,083.

THE GRISCOM-RUSSELL COMPANY
285 Madison Ave., New York

Philadelphia	Massillon		Charlotte	Kansas City
Boston	St. Louis		Memphis	San Francisco
Rochester	Minneapolis		Indianapolis	Los Angeles
Buffalo	Milwaukee		Cincinnati	Seattle
Pittsburgh	Detroit		Tulsa	Portland
Chicago	New Orleans		Houston	Denver
Cleveland	Atlanta		Dallas	

For Canada: Riley Engineering and Supply Co., Ltd., Toronto

HEAT EXCHANGERS
CONDENSERS
Sub-cooling—Partial—Reflux
Shell-and-Tube, Atmospheric, and Condenser Box Types
COOLERS
Liquid—Gas—Jacket Water
Shell-and-Tube, Atmospheric, and Condenser Box Types
OIL HEATERS
LEVEL CONTROLLERS

Griscom-Russell

Heat Transfer Apparatus

Tomorrow's design for *today's* service

THE GIANT

Regan 76"

Traveling Block

(TYPE 3-B)

For extra heavy duty service.
Many improved features.
Greatest rigidity—greatest speed.
Staggered sheave construction.
Anti-friction dual bearings.

Regan

Forge & Engineering Co.

Oil Field Equipment

Plant and General Offices:

SAN PEDRO (Los Angeles Harbor) CALIFORNIA, U. S. A.

New York Office
75 West Street
Wm. Brant, Manager

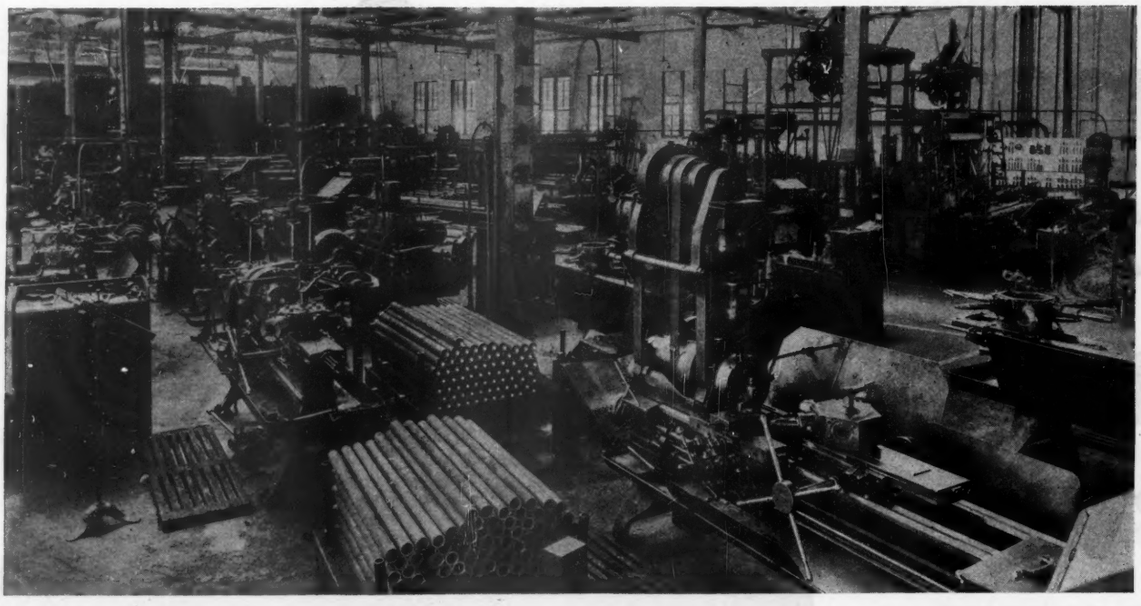
Mid-Continent Office
Dallas, Texas
501-2 Marvin Building

Representatives

Oklahoma City, Okla.
2420 W. 21st St.

Maracaibo, Venezuela
Wm. Adams,
Care Amer. Consul

Pecos, Texas
P. O. Box 444



Large stocks of Axelson Plungers in every size are carried for immediate shipment. Each plunger is sprayed with a film of heavy oil for protection.

Axelson Plungers

—As **STRAIGHT** as a Die

—As **SMOOTH** as a Mirror

EACH Axelson Plunger is produced from special steel tubing which is first bored and threaded on both ends for top and lower plunger fittings. The tubing is turned, ground and polished, tested with snap and ring gauges. These plungers are perfectly interchangeable without the necessity of fitting them to individual working barrels. Finished to definite diameters and machined for undersize and oversize fits.

Catalog gives full details.

AXELSON MACHINE COMPANY

P. O. Box 337, Los Angeles
Tulsa • St. Louis
New York City, 30 Church St.

Mid-Continent and Eastern Distributors
— Frick-Reid Supply Corporation

THERE IS NO ECONOMICAL SUBSTITUTE FOR QUALITY

Copyright 1920 Axelson Machine Company

Axelson OIL WELL Pumps

S-W HEAT EXCHANGERS
Cover the Entire Range-
~in size and ~in capacity

Characteristics of Struthers-Wells Heat Exchangers

—

Flexibility of Arrangement
Compactness
High Heat Transfer
Low Friction Losses
Tube Bundles Removable Intact
Completely Accessible
No Interleakage
Operate Vertically or Horizontally
Low Maintenance Cost

Struthers-Wells Heat Exchangers incorporate all the advantages of standardized designs and construction in equipment exactly suited to your specific plant or process conditions. They may be obtained in single and multiple sections and in any capacity.

This Company offers you the services of its engineers for the design and construction of special heat exchangers and equipment of both plain and alloy steels.

STRUTHERS-WELLS CO. WARREN, PA.
Division of Struthers Wells-Titusville Corporation
1233-34 McCormick Bldg. 807 Liberty Trust Bldg. 50 Church St. 1124-26 Marine Trust Bldg.
332 S. Michigan Ave., Chicago Broad & Arch Sts., Phila. New York City Buffalo, New York

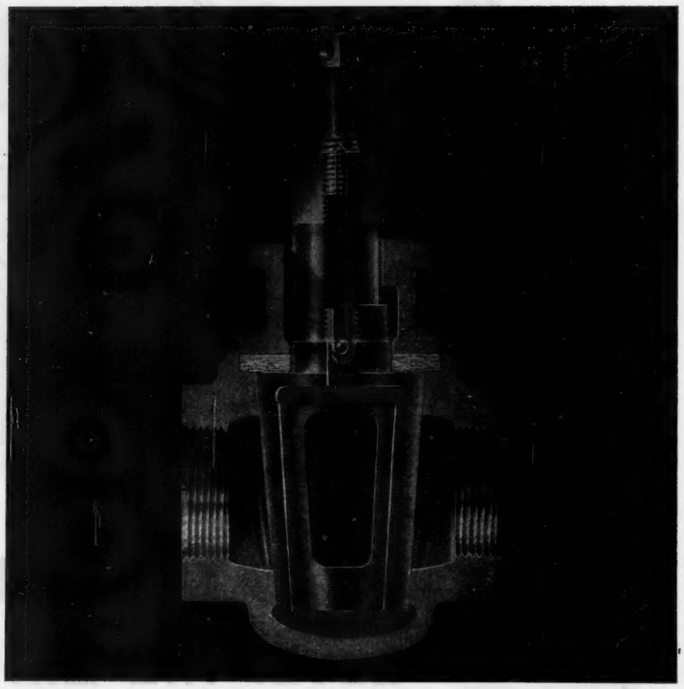
STRUTHERS-WELLS
HEAT EXCHANGERS

SW-5

WIN $250.00 CASH

18 Other Cash Prizes, Too! Total $500.00

WRITE A SIMPLE SLOGAN



This offer is open to every reader of this announcement. It makes no difference who you are or where you live. We want a new slogan for Nordstrom Valves. Whoever sends the best slogan will win $250.00. If you don't win the big cash prize, there are 18 other cash awards—any one of which may go to you.

"Won't Stick—Won't Leak" has been our slogan for years. But now we want something new—a slogan that will express in a few words the advantages of Nordstrom Valves. A brief synopsis of these advantages is given in this advertisement. Read it carefully. Or send for literature which may help you to submit the winning slogan.

CASH AWARDS	
First Prize . .	$250.00
Second Prize . .	100.00
Third Prize . .	50.00
4 Prizes, each . .	10.00
12 Prizes, each . .	5.00
TOTAL 19 CASH PRIZES	$500.00

Any slogan may win. No matter how simple your slogan may sound to you—send it in. You cannot afford to neglect this big opportunity to win one of the generous cash prizes offered. Remember — there is no obligation! The persons submitting the winning slogans will have nothing else to do. We have nothing to sell in this contest. Get busy with your slogans at once. A little time—a little thought—may win for you. Contest closes December 31st. Only a short time left!

RULES of Contest

Anyone is eligible except employees of Merco Nordstrom Valve Company or affiliated companies. Slogan must not exceed 10 words. Any number of slogans may be submitted by same person. Use coupon below or separate sheet of paper. In the event of a tie for any of the prizes offered, each winner of the respective award will receive the same cash amount.

MERCO
REG. U.S. PAT. OFF.

Ask for Literature

NORDSTROM VALVES *(lubricated)*

Stop Leaks
Prevent Sticking
Plug always easy to Turn

Nordstrom Valves are of the plug cock type, with lubrication and lifting features that make them easy and sure of operation. A stick of special "Merco" Lubricant is inserted under the lubricant screw. The latter, when turned, forces the lubricant down and around the plug. Fluid or other material within the line cannot pass around the plug and leak out, or lodge in the seat. The plug is always easy to turn. Made in types and sizes to meet conditions in all industries.

Merco Nordstrom Valve Co.
SUBSIDIARY OF THE MERRILL COMPANY
Engineers - Manufacturers

Atlanta: Healey Bldg. Boston: 184 Boylston St. Buffalo: Genesee Bldg. Chicago: 176 W. Adams St. Dallas: Magnolia Bldg. Detroit: 2842 W. Grand Blvd. El Paso: 111 S. Virginia St. Houston: Petroleum Bldg. Los Angeles: 556 S. San Pedro St. New Orleans: Masonic Temple Bldg. New York: 11 W. 42nd St. Pittsburgh: Clark Bldg. Portland: Buyers Bldg. San Francisco: 343 Sansome St.

AGENCIES IN PRINCIPAL CITIES

Factories—Oakland, California; and Belleville, New Jersey
Canadian Manufacturers—Peacock Bros., Ltd., Montreal, Cobalt, Winnipeg, Vancouver
England—Audley Engineering Co., Ltd., Newport, Shropshire
Buenos Aires, Argentine—General Electric, Soc. Anon., Victoria 618 Esq. Peru

FILL IN THIS ENTRY BLANK AND MAIL

MERCO NORDSTROM VALVE CO.,
343 Sansome St., San Francisco, Calif.

I submit the following slogan(s) pertaining to Nordstrom Valves:

_____

_____

_____

_____

Name_____

Address_____

City_____ State_____

(Use separate sheet if several slogans are submitted)

Everything IN CABLE and ROTARY EQUIPMENT from one dependable source

Bridgeport Service is complete in all lines of oil field equipment. Any kind of tool, rotary or cable, can be obtained from Bridgeport—with the usual prompt Bridgeport Service.

Our Hychrome Tools, produced under our exclusive Hychrome treating process, have proved their merit in the oil fields—in actual tests demonstrating that they are from 50 to 100% more serviceable than any other line of tools manufactured today.

This Hychrome line includes bits, stem boxes, stem pin, casing shoes, wire rope sockets, combination sockets and drive clamp bolts.

Here is a representative list of Bridgeport products stocked at all Bridgeport stores:

DRILLING BITS—HYCHROME
CASING BLOCKS—BRIDGEPORT
Wire Lines—Williamsport
UNDERREAMERS—REGULAR AND NEW TYPE SWAN
Belting—Lagface-Triumph-Duroflex
Manila Cordage—Wall
Steam Engines—Lucey
Gate Valves—Hughes
Jars—Spang and Liedecker
Rotaries—Lucey
Draw Works—Lucey
Pumps, Rotary—Lucey
Rotary Engines—Lucey
Boilers—Lucey
Traveling Blocks—Lucey
Rock Bits—Hughes
Tool Joints—Hughes & Lucey
Disc Bits—Guiberson
Crown Blocks—Lucey
Wiccapee—Rotary Drill Hose
Pittsburgh Steel Products Corp.—Seamless Tubular Goods
Wheeling Steel Corp.—Tubular Goods.

FULL LINE OF
BRIDGEPORT DRILLING and FISHING TOOLS
Lucey Rotary Equipment
Rotary, Drilling and Pumping Electrical Equipment
Consult pages 276 and 277 of the Composite Catalogue of Oil Field and Pipe Line Equipment for Bridgeport's complete line.

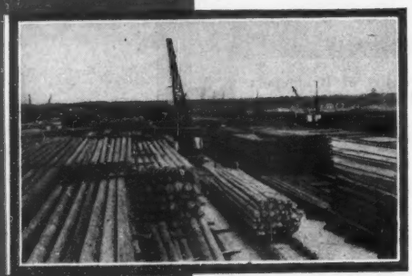
Bridgeport offers a full line of underreamers, drilling and fishing tools on a rental basis as well as for sale. Complete stock is carried at all branch stores—there's one at every principal oil field—where day and night service is maintained. When you are in need, you'll find Bridgeport always ready to serve and supply you. Complete information as to rental service, or descriptive bulletins will be sent on request.

"BRIDGEPORT RENTAL SERVICE - MOST EXTENSIVE - LEAST EXPENSIVE"

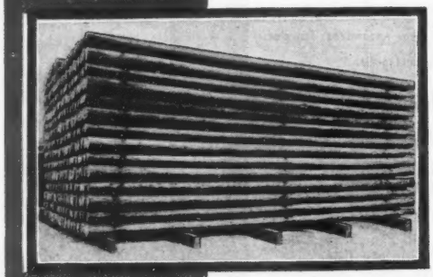
THE BRIDGEPORT MACHINE COMPANY
GENERAL OFFICES & FACTORY
WICHITA, KANSAS
Branches Throughout The Oil Fields

WHY THEY LAST

Poles stacked uniformly on creosoted skids at the Beaumont Plant.



Poles being stacked for seasoning on the specially built seasoning yard at Texarkana.



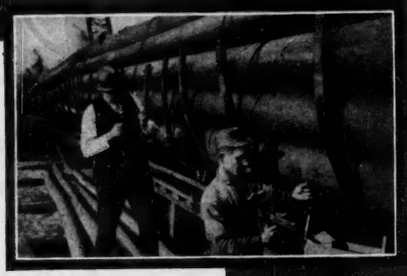
A stack of International poles produced on order for one company.

SCIENTIFIC control during seasoning, as applied by ***International,*** keeps the poles absolutely free from decay. The proper and thorough seasoning of poles assure a deep and uniform penetration of creosote oil .... Ample stocks assure prompt shipment of poles, framed prior to treatment according to your specifications, ready for the hole upon arrival.

International poles are pre-proved. Thousands of ***International*** poles still sound after 20 to 30 years service are the best evidence that ***International*** poles do last.

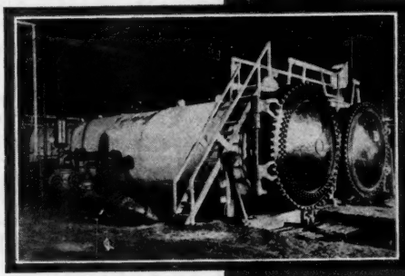
Before you order poles—compare facts, for there is no substitute for experience.

International Creosoting & Construction Co.
General Offices—Galveston, Texas
Plants: Texarkana Beaumont Galveston

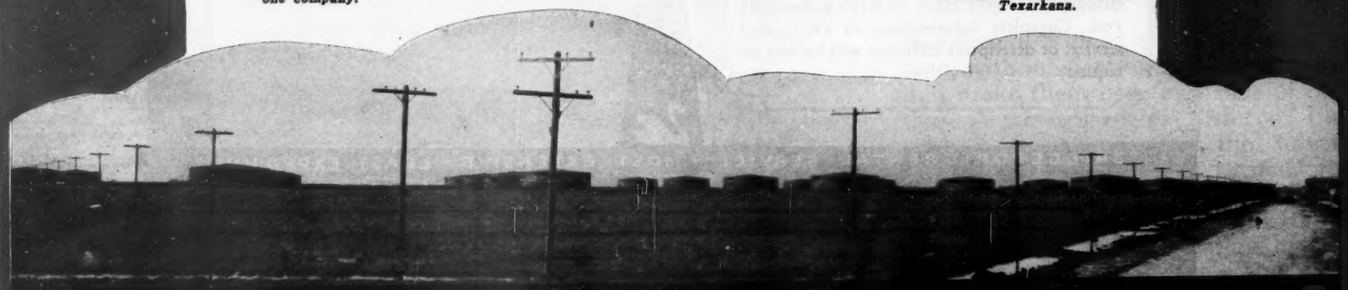


Increment boring being taken to check the depth of penetration.

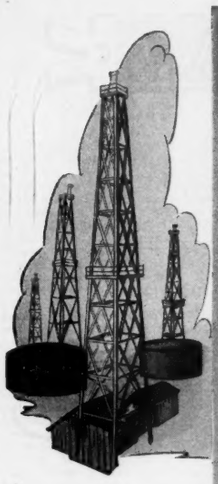
Graduate chemist making test on samples of creosote.



The two largest treating cylinders in the wood preserving industry; located at Texarkana.



International
Creosoted Yellow Pine Poles



SPANG

WELDED

CASING
STANDARD PIPE
LARGE O. D. PIPE
LINE PIPE
DRIVE PIPE
DRILL PIPE

Sizes ⅛ inch to 24 inch O. D.

STANDARD

SEAMLESS

CASING
TUBING
DRILL PIPE
(Regular and Heat Treated)
LINE PIPE
STILL TUBES

Sizes 2 inch to 13⅜ inch O. D.

STRONG yet DUCTILE,

Since 1828

No matter what you consider important in pipe, Spang Pipe has it. Take strength, for example. Every length of "Spang" Welded and "Standard" Seamless Pipe is tested to withstand pressures higher than you will ever subject them in service—That means the maximum factor of safety for any emergency.

Another thing you will like about Spang Pipe is the soft, easy working quality of the special steel—saves time and labor.

SPANG, CHALFANT & CO., INC.

General Offices: **CLARK BUILDING, PITTSBURGH, PA.**

Sales Offices: CHICAGO, ILL. NEW YORK, N. Y. ST. LOUIS, MO. PITTSBURGH, PA. TULSA, OKLA. LOS ANGELES, CAL.
Welded Mills: ETNA, PENNA. SHARPSBURG, PENNA. ***Seamless Mills:*** AMBRIDGE, PENNA.

NEW LINES CONTEMPLATED ?

Investigate the new Hill, Hubbell & Company process of mechanically coating and wrapping pipe *at the mill.* Biturine Coatings are particularly adapted for use with this process.

Once the pipe is in the ground

Pipe is expensive. Pipe laying is a costly operation. But the taking up and reconditioning of old pipe lines—laid without the proper protection—is the most expensive operation of all.

Once unprotected pipe has been lowered into the ground, corrosion starts—begins to levy its appalling toll.

You can protect your pipe line investment *before* corrosion sets in. For twenty-three years this organization has been developing a group of protective coatings to meet the specialized needs of the oil industry.

Biturine Coatings have earned the respect and enthusiastic endorsement of pipe line operators and their engineering staffs, for Biturine has met the exacting requirements of rigid competitive tests and is today demonstrating its superiority in thousands of miles of pipe lines.

Inter-State Gas Company Line from Monroe, La., to Natchez, Miss., Coated Outside with Biturine Enamel

BITURINE COATINGS

Biturine Enamel Biturine Enamel Primer*
Biturine Coupling Solution
Biturine Solution No. 5 Biturine 70-30

Biturine Enamel Primer can be obtained with Inhiburine

We will be glad to furnish you with records of service of Biturine coated lines upon receipt of your inquiry at any of the offices listed below.

*INHIBURINE

This entirely new inhibitor with extraordinary anti-corrosive powers is now being incorporated into Biturine Primer whenever specified. Being solvent in Bitumens it becomes an integral part of the priming coat and thereby functions as a second line of defense against corrosion should the Biturine Enamel Coating be penetrated.

GENERAL PAINT CORPORATION

HILL, HUBBELL & COMPANY DIVISION

The ADVERTISERS' INDEX

A

Acme Fishing Tool Co.
Ajax Iron Works 84-85
Ajax Rope Co.
Alco Oil Tool Co.
Allegheny Steel Co. ....Inside Front Cover
Allis-Chalmers Mfg. Co. 5
All Steel Products Mfg. Co.
Aluminum Co. of America
American Askania Corp.
American Asphalt Paint Co. 182
American Cable Co., Inc.
American Car & Foundry Co.
American Fomon Co.
American Iron & Machine Works Co.
American La France & Foamite Corp.
American Meter Co. Inc. 22
American Radiator Co.
American Roller Bearing Co. ....
American Rolling Mill Co. 168
American Schaeffer & Budenburg Corp.
American Sheet & Tin Plate Co. 123
American Steel & Wire Co.
American Steel Works
American Telephone & Telegraph Co.
American Well Works 180
Anchor Post Fence Co. 106
Andrews Steel Co., The
Armstrong Bros. Tool Co. 183
Armstrong Machine Works 165
Ash Grove Lime & Portland Cement Co.
Athey Truss Wheel Co.
Axelson Machine Co. 26
Ayer & Lord Tie Co.

B

Baash-Ross Tool Co.
Babcock & Wilcox Tube Co., The
Badger, E. B., & Sons Co.
Baker Oil Tools, Inc. 61
Baldwin Chain & Mfg. Co.
Barco Manufacturing Co. 12
Barnickel, Wm. S., & Co.
Barnsdall Refineries, Inc. 91
Barrett Co., The
Bartlett Hayward Co., The 183
Beaumont Iron Works Co., The
Bell Oil & Gas Co.
Bendster Burner & Engineering Co.
Bessemer Engine Co. 66-67
Bethlehem Steel Co.
Bigelow Liptak Corp.
Big Lake Oil Co.
Bignall & Keeler Machine Works
Blackor Co. 103
Black, Sivalls & Bryson, Inc. 79
Bosch, Robert, Magneto Co., Inc.
Braden Steel Corp.
Braun, C. F., & Co. 19
Brewster Co., Inc., The 107
Bridgeport Machine Co. 29
Bristol Co., The
Broderick & Bascom Rope Co. 1
Brown, Arthur C. 183
Brown Instrument Co.
Brown Strauss Corp. 182
Buckeye Traction Ditcher Co.
Buda Co., The
Buffalo Gasolene Motor Co. 13
Burt Mfg. Co.
Butler Mfg. Co.
Byers, A. M., Co.
Byron Jackson Co. 65-77

C

California Manufacturing & Engineering Co. 161
Cameron Tool & Supply Co.
Carey, The Philip, Co.
Caterpillar Tractor Co.
Central Alloy Steel Corp.
Central Tube Co.
Cessna Aircraft Co.
Chain Belt Co. 120
Champion Machine & Forging Co., The
Chaplin-Fulton Mfg. Co., The 182
Chapman Valve Mfg. Co., The
Chicago Bridge & Iron Works 16
Chicago Pneumatic Tool Co.
Chicago Steel Foundry
Chisholm-Moore Hoist Corp.
Clark Bros. 153
Classified Wants 132-133
Cleveland Trencher Co., The
Climax Engineering Co.
Colona Mfg. Co. 14
Columbian Rope Co.
Columbus Forge & Iron Co., The
Columbus Valve Mfg. Co., The
Consolidated Ashcroft Hancock Co., Inc.
Continental Supply Co., The 89
Cook, C. Lee, Mfg. Co.
Cooper-Bessemer Corp., The 66-67
Cooper, C. & G., Co., The 66-67
Crane Co. 183
Crane Packing Co.

D

D. & B. Pump & Supply Co. 97
Darling Valve & Mfg. Co.
Dart, E. M., Mfg. Co.
Davis, G. M., Regulator Co. 174
Dearborn Chemical Co.
Delta Electric Co.
Detroit Graphite Co.
Dodge Bros. Corp.
Doheny Stone Drill Co.
Donner Engineering Co.
Donovan Boiler Works, Inc.
Dow Chemical Co., The 63
Drane Humphreys Co., Inc.
Dresser & Gorton, Inc.
Dresser, S. R., Mfg. Co. 45
Du Pont de Nemours & Co. Inc. E. I.
Durametallic Corp. 155

E

Eagle-Picher Lead Co. 3
Eclipse Lubricator Co., Inc.
Economy Pump & Oil Tool Co., The
Edward Valve & Manufacturing Co., The

E

Elliott Core Drilling Co.
Emerman, Louis E. & Co.
Empire Oil & Refining Co.
Emsco Derrick & Equipment Co. 97
Enduro Nirosta Steel Co.
Engineering Research & Equip. Co. 136
Ethyl Gasoline Corp.
Exchange Banks of Tulsa 75

F

Feedwaters, Inc.
Fenwick-Reddaway Mfg. Co.
Ferodo & Asbestos, Inc. 173
Fisher Governor Co.
Fisk Tire Co., The
Flagg & Co., Inc., Stanley G.
Fluor Construction Co.
Fort Worth Steel & Machinery Co.
Fort Worth Well Machinery & Supply Co., Inc.
Foster Wheeler Corp. 9
Four Wheel Drive Auto Co., The 17
Foxboro Co., Inc., The 113
Franklin Valveless Engine Co. 23
Frates Co., The 159
Frick-Reid Supply Corp. 117
Fuji Trading Co.
Fulton Iron Works Co.

G

G & M Co., Inc., The
Gardner-Denver Co.
Garlock Packing Co.
Gaso Pump & Burner Mfg. Co. ....
....Inside Back Cover
General Electric Co. 176
General Paint Corp. 32
Gilbert & Barker Mfg. Co.
Gobie, B. G.
Goodrich, B. F., Rubber Co., The 21
Goodyear Tire and Rubber Co.
Goslin Birmingham Mfg. Co., Inc.
Gott, H. P., Mfg. Co., Inc. 180
Gould's Pumps, Inc.
Grant Oil Tools Co.
Graver Corp.
Gray Processes Corp., The
Greene, Tweed & Co.
Greenspon's, Joseph, Sons, Iron & Steel Co. 105
Griscom-Russell Co. 24
Guiberson Corp. 127
Gulf Refining Co. 172

H

Halliburton Oil Well Cementing Co. 20
Hanlon-Buchanan, Inc.
Hanlon-Waters, Inc.
Harrisburg Pipe & Pipe Bending Co.
Haynes Stellite Co.
Hazard Wire Rope Co.
Heat Transfer Products, Inc.
Heeter, Sons & Co., Inc., C. M.
Hercules Motors Corp.
Hercules Supply Co.
Hercules Tool Co.
Heydrick Mapping Co. 183
Hill, Hubbell & Co. 32
Hills-McCanna Co. 111
Hinderliter Tool Co.
Hope Engineering Co.
Hough, Charles N., Mfg. Co. 152
Hughes Tool Co. ....Back Cover
Humble Oil & Refining Co.
Husmann Hotel
Hyatt Roller Bearing Co.

I

Imperial Belting Co.
Imperial Refineries
Imperial Royalties Co.
Independent Oil & Gas Co.
Industrial Brownhoist Corp.
Ingersoll-Rand Co. 108
International Cement Corp.
International Composition Co., Inc. 152
International Creosoting & Construction Co. 30
International Derrick & Equip. Co.
International Harvester Co. of American
International Minerals & Metals Corp.
International Nickel Co., Inc., The
International Petroleum Exposition
International Supply Co.

J

Jackson Co., Byron 65-77
Jackson Engineering Corp.
Jarecki Mfg. Co.
Jefferson Union Co.
Johns-Manville Corp.
Jones & Laughlin Steel Corp.
Jones, The S. M., Co. 167

K

Kaw Steel Construction Co.
Kellogg, M. W., Co., The 71
Kelly, John Eoghan
Kennedye-Plumb Corp.
Kennedy Valve Mfg. Co., The
Kentucky Wagon Mfg. Co., Inc.
Kerotest Mfg. Co.
Key Boiler Equipment Co.
Kirk-Morrow Iron Works, The 73
Kohler Co.
Koppers Co., The
K-W Ignition Corp., The

L

Landis Machine Co.
Larkin Co.
Layne & Bowler Co.
Leader Iron Works
Lees-Bradner Co.
Leschen, A., & Sons, Rope Co.
Lientz & Co., B. P.

L

Lincoln Electric Co.
Linde Air Products Co.
Link Belt Co.
Longyear, E. J., Co.
Lorraine Corp., The
Lucey Products Corp.
Ludlow Valve Mfg. Corp. 151
Ludlum Steel Co.
Lufkin Fdy. & Machine Co., The
Lufkin Rule Co. 178
Lummus, The Walter E., Co
Lunkenheimer Co.

Mc

McAlear Mfg. Co., The
McCord Radiator & Mfg. Co. 101
McEveriast, Inc.
McEvoy, J. H. & Co.
McGregor Working Barrel Co. 183
McIntosh & Seymour Corp.
McKee, Arthur G., & Co.
McNabb Oil & Refining Co.

M

MacClatchie Mfg. Co.
Macwhyte Co.
Madison-Kipp Corp. 104
Magnolia Petroleum Co. 179
Mahoney Ryan Aircraft Corp., The
Maloney Tank Mfg. Co. ....Front Cover
Manzel Bros. Co.
Marion Machine Fdy. & Supply Co.
Marley Co., The
Marsh Gauge Pole Co. 183
Martin-Loomis Corp.
Mason Regulator Co.
Medart Co., The
Melcher, A. F.
Merco Nordstrom Valve Co. 28
Metric Metal Works 22
Midwest Piping & Supply Co., Inc. 163
Milam Building, The
Miller Combination Bailer & Pump Co.
Miller Improved Gas Engine Co.
Miller, Max B., & Co., Inc.
Mine Safety Appliance Co.
Missouri Portland Cement Co.
Moon Mfg. Co., The
Moore, Lee C., & Co., Inc. 68
Munn & Co. 183
Muskogee Iron Works
Myers, F. E., & Bro. Co. 178

N

National Lead Co.
National Lumber Manufacturers Ass'n.
National Petroleum Engineering Co. 178
National Supply Co. 92-93
National Tank Co.
National Tool & Metals, Inc.
National Transit Pump & Machine Co. 49
National Tube Co.
Natural Gas Equipment Co.
Naylor Pipe Co.
Neilan, Schumacher & Co. 56
Norris Bros., Inc. 170
North American Car Corp.
Northern Pump Co. 182
Novo Engine Co. 6
Nye Tool & Machine Works 7

O

Oakite Products Co.
O'Brien Steel Construction Co.
Ohio Injector Co., The
Oil Conservation Engineering Co., The
Oil Countries Specialties Mfg. Co., The
Oil Equipment & Engineering Exposition
Oil Insurance Association
Oil Well Improvements Co. 171
Oil Well Supply Co. 83
Oklahoma Gas & Electric Co.
Oxweld Acetylene Co. 2

P

Page & Hill Co.
Page Steel & Wire Co.
Parkersburg Machine Co.
Parkersburg Rig & Reel Co. 87
Parmenter & Selby
Parsons Co., The
Patrick, R. S.
Patterson-Ballagh Corp. 156-157
Pattin Brothers Co.
Penberthy Injector Co. 53
Petroleum Engineering Corp.
Petroleum Engineering University
Petroleum Iron Works Co.
Pforzheimer, Carl H., & Co. 177
Phillips Petroleum Co.
Pittsburgh Equitable Meter Co. 178
Pittsburgh Screw & Bolt Corp. 14
Pittsburgh Steel Products Co.
Pittsburgh Valve, Fdy. & Construction Co.
Podbielniak, W. J. 180
Pomona Pump Co.
Powell, William, Co. 169
Power Piping Co.
Prescott Co., The
Pressed Steel Car Co.
Pres-O-Lite Co., Inc., The
Protective Metals, Inc.
Pure Oil Co.
Pyle National Co.
Pyrene Mfg. Co.

Q

Quaker City Rubber Co.

R

Raigorodsky, P. M. 180
Rau Construction Co.
Reading Iron Co. 4
Reading Steel Casting Co., Inc.
Reece Wooden Sole Shoe Co., Inc.

R

Regan Forge & Engineering Co. 25
Reid, Joseph, Gas Engine Co.
Republic Iron & Steel Co. 181
Republic Rubber Co., The
Republic Supply Co. 125
Resistcor Engineering Corp.
Riter-Conley Co.
Robinson Orifice Fittings Co. 102
Ross-Meehan Foundries Co.
Russell Mfg. Co., The 166
Ryan Aircraft Co.
Ryerson, Joseph T., & Sons, The 178

S

Safety Gas Main Stopper Co. 183
Selden Co., The
Shaffer Oil & Refining Co.
Shaffer Tool Works
Shaw, S. F.
Sheehan Pipe Line Construction Co.
Shell Petroleum Corp.
Sinclair Refining Co. 143
Sivyer Steel Casting Co.
Skelly Oil Co.
Skinner, M. B., Co.
Smith, A. O., Corp. 10-11
Smith Engineering Co.
Smith, H. C., Mfg. Co., Inc. 99
Smith Separator Co.
Smooth-On Mfg. Co.
South Chester Tube Co.
Southern Cornice Works
Southwestern Engineering Corp. 43
Southwest Welding & Mfg. Co.
Spang & Co.
Spang, Chalfant & Co., Inc. 31
Springfield Wagon & Trailer Co.
Standard Power Equipment Corp.
Standard Steel Works
Star Drilling Machine Co.
Steiner, George 183
Sterling, Stop-Watch Co., The
Stockham Pipe & Fittings Co. 8
Stoody Co. 15
Stork Engineering Co.
Strom Steel Ball Co. 158
Strong Carlisle & Hammond Co., The
Struthers-Wells Co 27
Sullivan Co., The
Sullivan Machinery Co.
Sun Shipbuilding & Drydock Co.
Sureshot Torpedo Co.
Swartwout Co., The

T

Taubman Supply Corp.
Taylor Instrument Companies 162
Templeton, Kenly & Co., Ltd.
Terry Steam Turbine Co., The
Texas Creosoting Co.
Texas Power & Light Co.
Thermoid Rubber Co.
Thompson, Wilfred A.
Timken Roller Bearing Co. 51
Titusville Forge Co.
Titusville Iron Works Co., The 18
Toledo Pipe Threading Mch. Co., The .177
Trackson Co.
Trimont Mfg. Co.
Truman-Smith Const. Co.
Trumble Gas Trap Co.
Tube Turns, Inc. 160
Tulsa Boiler & Machinery Co.
Tulsa Chamber of Commerce
Tulsa Sheet Metal Co.
Twin Disc Clutch Co.

U

Union Carbide & Carbon Corp. 3
Union Mfg. Co.
Union Wire Rope Corp. 160
United Tractors & Equip. Corp.
Universal Oil Products Co. 47

V

Vallez Rotary Filters Co.
Vez Company, The 55
Victaulic Co. of America
Victor Balata & Textile Belting Co.
Victor Welding Equipment Co.
Vogt, Henry, Machine Co.

W

Wagner Electric Corp.
Wailes, Dove-Hermiston Corp. 180
Walworth Co. 94-95
Warren Petroleum Co.
Washburne, Chester W. 183
Waukesha Motor Co. 81
Wertzberger Derrick Co.
Western Gas Construction Co., The
Westinghouse Electric & Mfg. Co., The .150
West Texas Utilities Co.
Whiting, P. H., & Co., Inc.
Wickwire Spencer Steel Co. 164
Wico Electric Co.
Wiemann-Kammerer-Wright, Inc.
Wilgus Mfg. Co., The
Williamette Ersted Co.
Williams, J. H., & Co. 175
Williamsport Wire Rope Co.
Williams Tools Corp.
Wilson-Snyder Mfg. Corp.
Wilson Welder & Metal Co., The
Winkler-Koch Engineering Co., The
W-K-M Co., Inc.
Wood Shovel & Tool Co., The 59
Worthington Pump & Mch. Corp. 118-119
Wright Mfg. Co.
Wyatt Metal & Boiler Works

Y

Yale & Towne Mfg. Co.
Young Engine Corp.

Z

Zero Hour Torpedo Co., The
Zwetsch, Heinzelmann & Co.

The Oil and Gas Journal

PRODUCING REFINING ENGINEERING MARKETING

VOL. 28. NO. 26. TULSA, OKLAHOMA, NOVEMBER 14, 1929

Copyright, 1929, by The Petroleum Publishing Co.

TABLE OF CONTENTS

SPECIAL ARTICLES

Record Drop in Crude Oil Production 35
By Andrew M. Rowley
Output has declined more than 300,000 bbls. daily in three weeks, due to conservation. Must continue co-operation.

To Transport Gasoline by Pipe Line 37
New Jersey Company will move products inland from Bayway.

Texas Leases Speed Development 38
By E. B. Reeser
Danger of overproduction through university drilling requirement.

Unit Operation Permanent Cure 38
By W. N. Davis
Curtailment agreements only temporary expedients.

California Output Cut 185,000 Bbls. 39
By L. P. Stockman
Reduction in prices achieve long-sought result.

Government Data Show Curtailment Need 40
By C. O. Willson
Large additions to storage. South American refinery factor.

Miniature Rig for Crooked Hole Tests 41
Interesting experiments in field laboratory.

Potential Missouri-Kansas Oil Pools 41
By L. G. E. Bignell
Growing gas development south of Kansas City.

Electric Heaters Remove Paraffin 42
By L. G. E. Bignell
Used with good results. Progress of research.

Important Discovery in Wyoming 42
By Tolbert R. Ingram
Kinney Coastal well on Pilot Butte Dome attracts attention.

Making Progress (Editorial) 44

Gasoline Gum Content Important 46
By Peter Bilkas and L. P. O'Neill
Trend toward antiknock motor fuels responsible.

Moisture in Calcium Grease Making 46
By Fred C. Otto
Study of 70 samples gives important data.

Pipe Line Construction News 72

Field Problems and Their Solution 86
Edited By Thomas F. Smiley

Proportioning Concrete for Oil Field Use 101
By Walter H. Meier

Geothermal Gradients on Oil Structures 105

Field of Special Uses of Gas Lift 149
Constantly changing and what may be new today is old tomorrow. Some of the specialties employed.

Air-Cooled Furnace Walls for Stills 173
By A. L. Nugey

Billion-Barrel Mark in Crude Passed 177
By James McIntyre

FIELD OPERATIONS

Late Fields 48

Oklahoma 50
By W. A. Spinney

Kansas 52
By W. A. Spinney

Southwest Texas 54
By B. D. Stevenson

North Louisiana-Arkansas 57
By D. H. Bancroft

Gulf Coast 58
By Neil Williams

Rocky Mountain Area 60
By Tolbert R. Ingram

Canada 60
By Victor Lauriston

California 62
By L. P. Stockman

Michigan 62
By Special Correspondent

West Texas 69
By L. E. Bredberg

North Texas and Panhandle 70
By L. E. Bredberg

East Central Texas 70
By L. E. Bredberg

Central West 78
By Whit

Kentucky-Tennessee 78
By Whit

Eastern Fields 80
By D. S. Wakenight

REFINING AND MARKETING

Oklahoma Fuel Oils Continue Strong 36
By C. O. Willson
All grades scarce at firm prices. Break in retail prices factor in refinery tank car market.

Technical Questions Answered 90
By Dr. C. K. Francis

Practical Suggestions in Refining 130
By W. T. Ziegenhain

Two-Cent Reduction in Chicago Area 134
By J. B. Waldo

Steady Tone in Eastern Market 135
By A. E. Mockler

Natural Gasoline Manufacture 137

Brief Items for Petroleum Refiners 138

Refinery and Crude Prices 140-141

Tank Wagon Quotations 142

Of Interest to Sales Departments 154

ARTICLES OF GENERAL INTEREST

The Advertisers' Index 33

Men Known in Oildom and Personals 82

Natural Gas Developments 88

Equipment and Supplies 96-98

Classified Want Advertisements 132-133

Oil Securities Markets 144-145

Crude Petroleum Statistics 184

BE A REGULAR READER

The Oil and Gas Journal Tulsa, Okla.

You are hereby directed to mail The Oil and Gas Journal to me for .....year. Enclosed find remittance $ .....

Classify my interests as checked by me.

..... Producing ..... Refining
..... Equipment ..... Marketing

Name .....
Address .....
City .....

$6 a Year
$3 6 Months

Refinery Section Starts on Page 131

Record Drop in Crude Oil Production

Highest daily average estimated total production in 1928, week ended Dec. 29, 2,585,844 bbls. Lowest in 1928, May 19, 2,338,241 bbls.

Output Declined More Than 300,000 Bbls. Daily in Three Weeks, Due to Conservation. Must Continue Co-operation

By Andrew M. Rowley

Highest daily average estimated light oil production in 1928, week ended Dec. 29, 2,158,134 bbls. Lowest in 1928, Mar. 3, 1,927,713 bbls.

The largest decrease in the daily average production of crude petroleum in the United States ever recorded during any week in the history of the industry was registered last week. The output of crude in the United States has declined more than 300,000 barrels a day during the past three weeks. The conservation movement is solely responsible for this wonderful achievement and for the unusually healthy condition the industry enjoys at this time. The conservation movement not only has brought crude oil production down to about market requirements but it prevented further increases in output which would have completely demoralized the entire industry with a resultant slashing of prices everywhere to levels far below the actual cost of production.

The petroleum industry is entering the winter season of minimum demand with better prospects and a far brighter outlook than it has experienced in years. If present conservation movements are continued effective and production is held near the present level crude will be withdrawn from storage in many areas instead of the usual condition of further additions being made to storage during winter months. But every operator should remember there is more than 500,000,000 barrels of crude oil in storage. Also that it would require more than seven years to exhaust this storage even were 200,000 barrels withdrawn every day.

It is of paramount importance that every operator in every flush area in the United States realize that prosperity for everyone in the industry—both big company and little operator—is assured if present conservation agreements are maintained and continued entirely effective. And just as important that he know if these agreements are abrogated and not lived up to 100 per cent, there can be but one result — overproduction with resultant starvation prices.

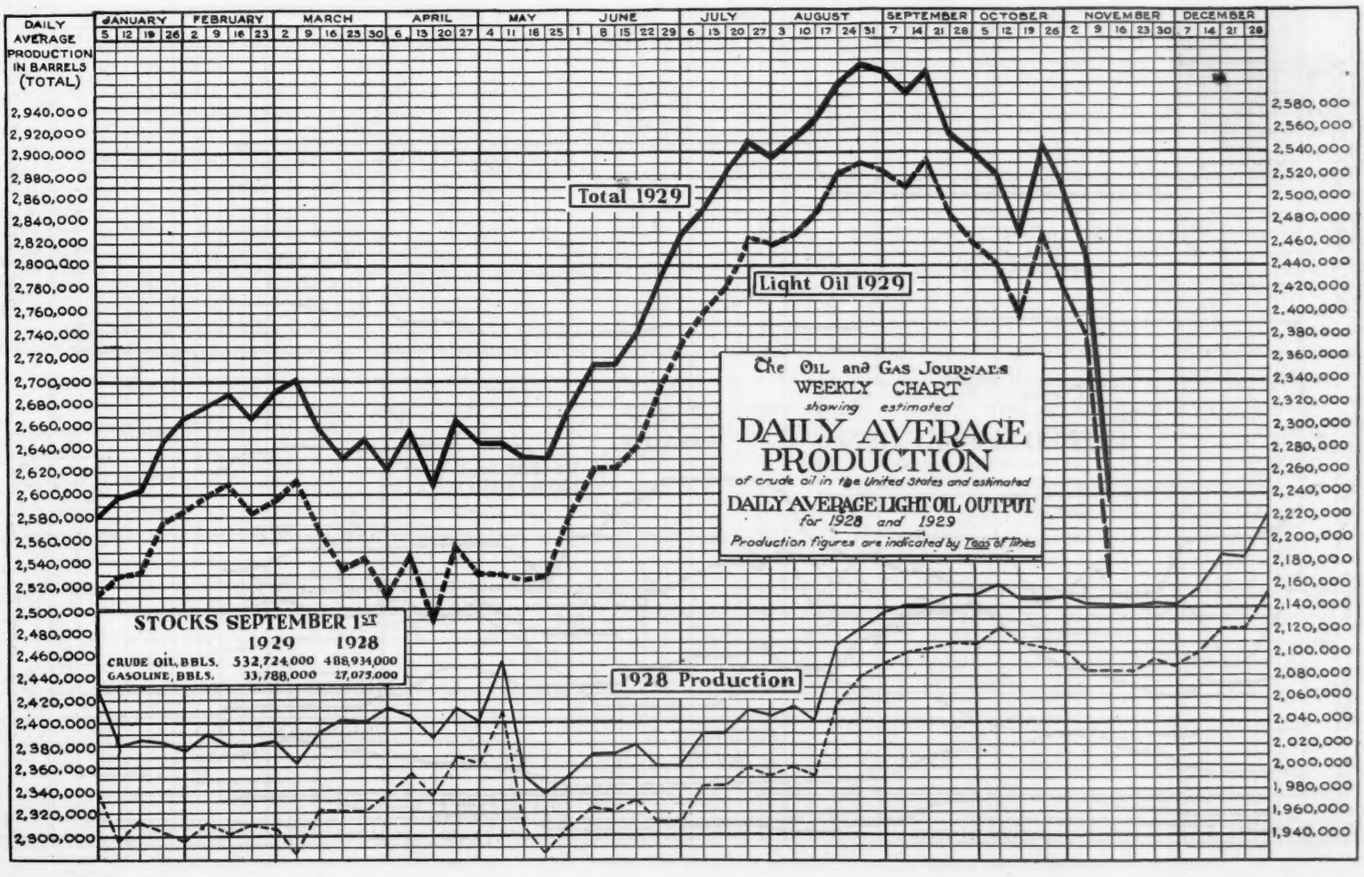
PRODUCTION IN THE UNITED STATES

Ettimated daily average production of light and heavy gravity oil in the United States for the week ended November 9, and a comparison with the previous week follows:

	November 9		November 2	
	Light	Heavy	Light	Heavy
Oklahoma—				
Oklahoma City	37,385	.....	65,115	.....
St. Louis-Pearson	51,090	.....	51,780	.....
Seminole	232,915	.....	243,295	.....
Northern Miscellaneous	238,510	.....	243,460	.....
Southern Fields	57,080	.....	57,135	.....
Total Oklahoma	616,980	.....	660,785	.....
West Texas—				
Hendricks	109,715	.....	111,184	.....
Yates	137,835	.....	139,246	.....
Remainder	114,241	.....	113,674	.....
Total West Texas	361,791	.....	364,104	.....
North Louisiana	30,837	5,854	30,402	5,715
Arkansas	18,066	45,100	18,904	45,760
North Central Texas	149,659	.....	149,904	.....
Texas Panhandle	101,187	.....	102,309	.....
East Central Texas	18,114	.....	18,310	.....
Kansas	109,915	.....	110,315	.....
Total Mid-Continent Area	1,406,549	50,954	1,455,033	51,475
Gulf Coast	.....	186,975	.....	179,782
Southwest Texas	.....	62,175	.....	62,793
Eastern	135,000	.....	135,000	.....
Rocky Mountain Area	70,695	.....	72,998	.....
California—				
Santa Fe Springs	160,000	.....	255,000	.....
Long Beach	125,000	.....	166,000	.....
Huntington Beach	41,500	.....	41,500	.....
Elwood	27,500	.....	29,000	.....
Ventura Avenue	55,000	.....	61,000	.....
Seal Beach	23,000	.....	36,500	.....
Remainder of State	129,000	135,000	127,000	137,000
Total California	561,000	135,000	716,000	137,000
Total United States	2,173,244	435,104	2,379,031	431,050
Grand Total		2,608,348		2,810,081

→ **Total Decrease, 201,733 Bbls.; Light Oil Decrease, 205,787 Bbls.** ←

"IT CAN BE DONE"—THE OIL AND GAS JOURNAL, APRIL 28, 1927


DAILY AVERAGE PRODUCTION IN BARRELS (TOTAL)
JANUARY FEBRUARY MARCH APRIL MAY JUNE JULY AUGUST SEPTEMBER OCTOBER NOVEMBER DECEMBER
Total 1929
Light Oil 1929
1928 Production
The Oil and Gas Journals WEEKLY CHART showing estimated DAILY AVERAGE PRODUCTION of crude oil in the United States and estimated DAILY AVERAGE LIGHT OIL OUTPUT for 1928 and 1929
Production figures are indicated by Tens of Thos
STOCKS SEPTEMBER 1ST
1929 1928
CRUDE OIL, BBLS. 532,724,000 488,934,000
GASOLINE, BBLS. 33,788,000 27,079,000

Oklahoma Fuel Oils Continue Strong

All Grades Scarce at Firm Prices. Break in Retail Prices Factor in Refinery Tank Car Market

By C. O. Willson

Fuel oils were the strongest product of the Oklahoma (Group 3) refinery list over the past week. Despite a continued weakness in the high gravity distillate fuels which were joined by some of the gas oil grades during the past week, all the commercial grades of fuel oil are exceptionally scarce in Oklahoma.

The most important factors in the Oklahoma fuel oil market are apparently sold up for November delivery and the quantity of material available from the remaining refiners for spot shipment is less than the demand. The lowest price on any commercial grade the first of the week was 65 cents. Sales under this price are occasionally reported but an investigation generally shows this to be off-specification material. There is small production in Oklahoma of low gravity fuel oil, the residuum of cracking operations, which contains considerable free carbon. Fuel oil buyers generally refuse to purchase this material and special outlets have been developed with price concessions from 5 to 10 cents under the lowest priced commercial grades.

A large part of the spot business in fuel oil in Oklahoma is handled through brokers who supply the industrial trade centering in Chicago. This industrial business has been exceptionally large and those in touch with the situation state that this heavy demand will continue through the winter months unless there is a general slow-up in industrial operations.

Last year a cheap source of supply for this industrial demand was available from refiners in West Texas fields and relatively few orders were placed with Oklahoma and the other Mid-Continent groups. In recent months, however, the West Texas supply has been reduced. This is a reflection of higher crude oil prices, the expansion of cracking facilities and the plant shut-downs and curtailments which have become effective. This development has forced buyers back into the older Mid-Continent areas and they have found that the expansion of cracking and long time contracts with railroads has greatly reduced the quantity of fuel oil offered on the spot market.

Most market observers believe that fuel oil will continue strong. Fuel oil prices in Oklahoma are still relatively low in comparison with the prevailing crude oil market. Fuel oil at an average price around 75 cents per barrel in Oklahoma is still cheaper raw material for the manufacture of gasoline in cracking operations than crude oil for the skimming operation at a delivered price around $1.75 per barrel. One large refinery operator states that straightrun fuel oil under 26 gravity is worth a minimum of $1.25 per barrel for cracking based on the present crude oil posted schedules.

REFINED MARKET BAROMETER

The improved crude oil situation in California and the Mid-Continent is the most important development in refined oil markets. Bringing the supply of crude oil in line with the demand is believed to have indefinitely postponed any general lowering of crude oil prices. Refiners who have anticipated lower prices are now being compelled to adjust their plant operations and marketing plans on the assumption that crude oil costs will continue on their present basis. This development is expected to strengthen some of the weak spots in the refinery markets. The gasoline market showed little change over the past week. In the Middle West, distillate, kerosene and gas oil are generally weak although the heavier fuel oils of low cold test continue to be very strong. The Coastal markets are generally unchanged. Among the lubricants red and pale oils are stronger in the East with lower bright stock prices. Some grades of paraffin wax are lower in the East with no change in the Mid-Continent market.

East Coast—No price movements of major importance. Steadier tone in gasoline market with feeling that prices may be advanced fractionally in near future. Red and pale oils stronger. Bright stocks lower in price. Some grades of paraffin wax lower. Kerosene market steady. Bunker oil prices apparently pegged at present levels for remainder of year.

Mid-Continent—Furnace oil distillate, kerosene and gas oil weak and prices lower. Fuel oil strong. Natural gasolines more freely offered at lower prices. Refinery gasolines unchanged. No change in other products.

Chicago—Spot demand for domestic grades of refinery gasoline slow and additional price concessions reported. Kerosene sluggish at lower prices. Furnace oil continues weak. Fuel oils strong.

Pennsylvania—Bright stock prices lower. No important price changes in other products with gasoline and kerosene demand slow.

Gulf Coast—Red and pale neutral oil prices steady. Fuel oil and gasoline demand slow.

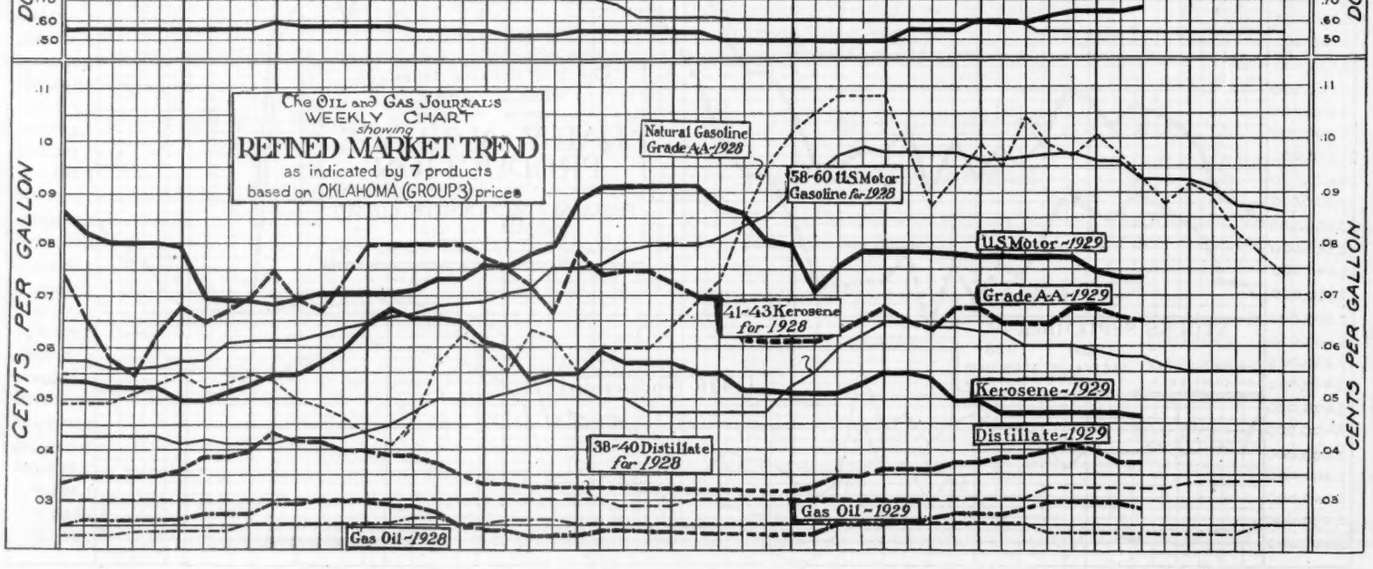
Gasoline Situation

The refinery gasoline market was disturbed during the past week with the announcement that distributors in Chicago had found it necessary to reduce their gasoline tank wagon and service station prices 2 cents. It is feared that this situation will spread to adjoining sections until a general reduction throughout the Middle Western states is forced.

The reduction in prices is a reflection of a competitive situation in retail markets which is not confined to Chicago. In Chicago and many other points the gasoline price cutter has done a thriving business over the past few months. These price cutters generally locate their stations adjoining railroad tracks so that they can retail from their bulk stations eliminating the tank wagon operation.

With a relatively small investment, large gallonage and low overhead these distributors as long as they have cheap sources of supply from refiners have no difficulty underselling the regular dealers from 2 to 4 cents a gallon. The fact that U. S. Motor gasoline has been available to these distributors under 7 cents (basis Group 3) from several

(Continued on Page 151)



To Transport Gasoline By Pipe Line

Standard of New Jersey Will Move Products Inland From Bayway, N. J., Refinery Through Tuscarora Line. Tariffs Filed

The shipment of gasoline over long distances by pipe line, an innovation in transportation, approached realization the past week with the announcement that the Tuscarora Oil Co. Ltd., has filed with the Interstate Commerce Commission, a tariff effective December 12, 1929, covering the movement of gasoline from Bayway, N. J., to various points in New Jersey and Pennsylvania.

The Tuscarora Oil Co. Ltd. is a subsidiary company of the Standard Oil Co. of New Jersey and for many years has operated a trunk pipe line system starting at Midland, Pa., near the Ohio line and terminating at the Bayway refinery of the parent company. This pipe line in the past has been used exclusively for the transportation of crude oil. It was rumored early in the year that the Standard Oil Co. of New Jersey was investigating the feasibility of using the line in the transportation of gasoline from its Bayway refinery by reversing the line operation and the action of the past week indicates that the company expects to make the plan effective in the immediate future.

The plan, if it proves practicable, no doubt will have wide significance in the transportation of gasoline from refineries or bulk terminals to points of consumption. The Tuscarora pipe line as shown in the accompanying map extends from the coastal terminal at Bayway across New Jersey and Pennsylvania, a distance of 371 miles.

Issue Tariffs

Although no announcements have been made by the New Jersey Standard as to just how the line will be operated it is apparent that the company expects to transport the gasoline to several points along the line. The tariff filed with the Interstate Commerce Commission establishes rates per barrel to local points as follows: Hamilton, N. J. 15 cents; Centerbridge, Pa., 17 cents; Barto, 20 cents; Cisna Run, 28 cents; East Freedom, 33 cents; Inglenook, 26 cents; Kepple, 40 cents; Midland, 45 cents; Portage, 34 cents; Romona, 23 cents; Reed, 37 cents; Shirley, 30 cents; Temple, 22 cents, and Watts Mill, 44 cents. The rates are effective December 12, 1929, and are issued by S. H. Flager, secretary of the Tuscarora company.

The pipe line will continue as a common carrier and regulations of the new tariff provide that to avoid contamination gasoline will be received by the company for transportation only when its specifications are in agreement with those for the gasoline being currently handled. Not less than 50,000 bbls. will be received from one consignor to one consignee and delivery will be made wholly or in part at any delivery point named in the tariff. Gasoline will be accepted for transportation only when free from all liens and charges. Deduction of 3 per cent will be made from the amount of each tender when the gasoline is received to cover losses due to shrinkage and evaporation incident to transportation of gasoline in pipe lines. Gasoline of required specifications will be received and delivered corrected as to temperature from observed degrees to A.P.I. degrees at 60 degrees Fahrenheit by use of the tables appearing in supplement to circular 154 of the Bureau of Standards.

To make possible the reversal of their pumping system from an easterly direction, as formerly, to a westerly movement, the Tuscarora company will continue to use some of their steam driven pumping stations, and in addition they have constructed three new electrically driven stations, one at Bayway, N. J., one at Cisna Run, Perry County, Pennsylvania, and one at East Freedom, Blair County, Pennsylvania. They have also built 13 miles of new 6-inch line in Beaver County, Pennsylvania, from a point near Negley, Ohio, to Midland, Pa.

Lower Rates

The tariffs explain the purpose of the line. The rates ranging from 15 cents for the shortest movement to the 45 cents for the maximum distance are substantially under rail rates. Rail rates for the distance covered by the pipe line would range from a minimum of 30 cents per barrel to around 70 cents per barrel.

It is believed that the Standard of New Jersey expects to use the line in extending its marketing facilities in Pennsylvania and also lower its transportation charges to several points in New Jersey where it has operated for several years. Last year the Standard of New Jersey organized the Standard Oil Co. of Pennsylvania as a subsidiary market company. Since that time the company has added to its station facilities from time to time although this expansion to a large extent has been confined to points readily served from the coast.

With the Tuscarora line the company can serve a thickly populated section extending across south and central Pennsylvania. The gasoline can be delivered to bulk stations along the line as named in the tariff and can then be transported by tank wagon and if necessary by tank car to consuming points. The line extends practically to the Allegheny River and if necessary deliveries could be made for water movement along the Allegheny and Ohio Rivers. At the present time the Standard Oil Co. of New Jersey is engaged in building a large bulk terminal on the river at Pittsburgh.

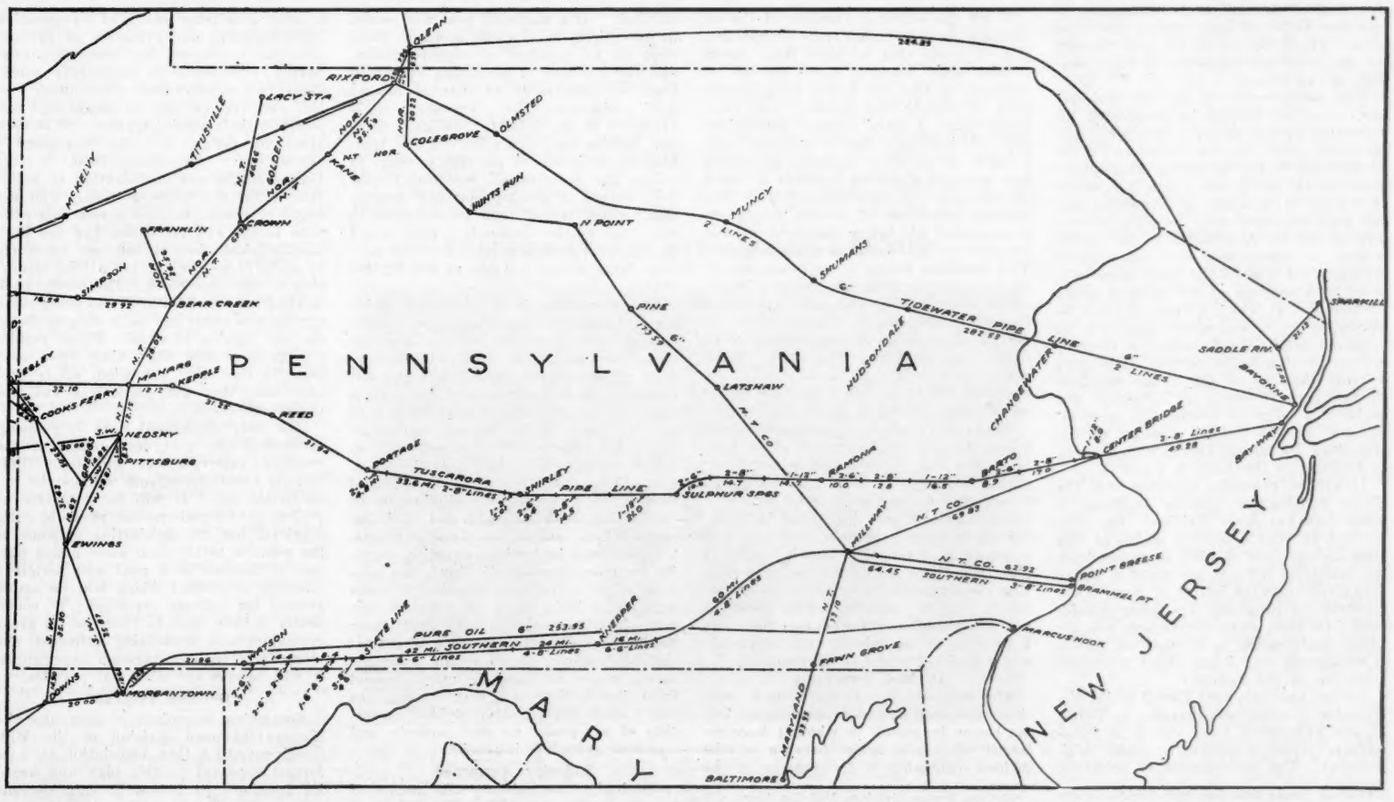
The matter of transporting gasoline by pipe line has often been discussed by refiners and marketers with the result that tentative plans were dropped as unfeasible. A group of Mid-Continent refiners at one time considered the construction of a co-operative line to extend from Oklahoma to some Mississippi River point. One of the objections raised at that time was that gasoline specifications from several refineries are not uniform and it would be necessary to mix all grades in pipe line movement. The Tuscarora tariff gets around this difficulty by requiring that the gasoline be of the same specification as that commonly transported in the line. This provision and the fact that the gasoline must be moved in shipments of not less than 50,000 bbls. apparently assures, for the present, at least, that the line will be used only by the Standard of New Jersey company although the line will be operated as a common carrier.

Other Pipe Lines

Should satisfactory results be obtained from the Tuscarora line it is probable that some of the other crude lines in the eastern fields will be changed to transport gasoline. As shown in the accompanying map, the eastern part of the United States extending from the Ohio-Pennsylvania line east to the coast has a network of the crude pipe lines. While most of these lines are still in service the total capacity exceeds the requirements. These lines were built at a time when the East Coast refiners were getting practically all of their crude oil supply by pipe line from Eastern, Middle Western and Mid-Continent fields. This situation to a large extent has been changed, the coastal refiners getting the bulk of their crude oil by water from the Gulf Coast, Mexico, South America and California.

This changing situation was reflected early in the year when the National Transit Co. reversed the pipe line flow so that crude oil was transported inland

(Continued on Page 115)



Map showing eastern pipe lines. The Tuscarora extending through New Jersey and Pennsylvania will be used in the transportation of gasoline.

Texas Leases Speed Development

President Reeser Warns of Danger of Overproduction Through University Land Drilling Requirements

By E. B. Reeser
President of American Petroleum Institute*

It is a pleasure to meet with you in this great Empire of the Southwest. I have watched the development of the petroleum industry in this part of the world with considerable interest and I am sorry to say that this is the first time that I have visited it.

I wonder how many realize the immensity of the activities within the territory of the Mid-Continent Oil and Gas Association. In the year 1928, 66 per cent of the total production of the United States was produced in the territory covered by this association.

When the Association was organized in 1917 the production of the entire United States for the year was 335,000,000 bbls.; last year the total produced in the Mid-Continent fields was 600,000,000 bbls. At the time of its organization, we were not concerned with overproduction and curtailment programs. Indeed, the Government and leaders of the industry were concerned as to how or where production could be increased to meet the demands. Prices for crude were advanced in 1920 to $3.50 per barrel in the Mid-Continent fields and this quickly solved the problem of supply.

This association is a federated concern in that in addition to its local divisions it has the general association which functions on matters of common interest to all the five states of the Southwest—Kansas, Oklahoma, Texas, Louisiana and Arkansas. May I urge on this occasion closer co-operation between the several divisions. At this time it is especially important that Texas, Oklahoma and Kansas work hand in hand with the general association.

Economic Situation

As suggested heretofore, 66 per cent of the nation's production is produced within your borders; whereas, only 12 per cent of the nation's consumption of gasoline is being used within the same area. These figures should give thought to the economic situation of the members in this group.

The Association, in all its divisions and branches, should be considered an executing agency to carry into effect the will and policy of the producers of the Southwest. It has wonderful accomplishments to its credit and it now has before it one of the greatest opportunities that has been presented since its organization. Let us use the Association to the fullest extent to accomplish our constructive purposes. I understand that there will soon be a meeting of the general board of directors at which a report should be presented by a committee organized to work out details and formulas for the consideration of a model pooling agreement. I trust that all of the Texas members of the general board of directors will make it a point to attend this meeting, as well as the annual meeting of the American Petroleum Institute to be held in Chicago on December 3, 4 and 5.

It will be generally admitted that the Texas division has greater problems to solve than any other division. The area covered by your activities, which at this time include New Mexico, is tremendous. The antitrust laws of the State of Texas throw fear into the hearts of many when constructive programs are being considered. In fact, state institutions are actually contributing to a condition which, if continued, may bring about a chaotic condition in the industry.

Nature has been very liberal in its distribution of petroleum deposits in Texas. It has apparently been stored in innumerable separate reservoirs under high pressure. The development of scientific devices, added to the competitive practices of the various corporations and individuals, has caused many of these productive areas to be tapped at a time when the product was not needed, and when so tapped, further competitive methods brought about wild orgies in drilling operations, causing a great economic loss and a waste of this natural resource.

Must Develop Plan

The industry throughout the entire United States is at this time operating under the greatest co-operative curtailment program ever known and has thus, temporarily at least, saved itself from ruin. While these voluntary curtailment plans are very desirable and those engaged in carrying out the programs should be highly commended for their activity, it must, nevertheless, be admitted that it is a temporary expedient, subject at any moment to the selfish motives or misunderstandings of one or more operators in each pool.

This great industry should not rely on expedients of this kind. It must develop a plan which will be legal, permanent and economically sound. We believe the "unit plan of operation" presents the greatest opportunity for curing many of the evils of our present method.

W. N. Davis, president of your Association, recently stated:

"Joint ownership and unit operation of oil pools is the only plan which can permanently cure overproduction of crude with its chain of attendant evils.

"I do not mean to minimize the desirability of temporary shut-down and periods of proration. These heroic remedies are essential in acute situations and those who co-operate to bring them about are deserving of the highest commendation, but they are palliatives and not cures."

W. S. Farish, past president of the American Petroleum Institute, says of unit operation:

"Unit operation of pools is the chief hope of the American oil industry. The individual pool is the natural competitive unit—man made the subdivisions.

"I am on record with the belief that if the industry will get behind the unit development plan, in four or five years we will have control of production—will no longer be subject to the demoralizing influences of flush pools.

"The small producer should make the biggest outcry for unit operation. His economic life is threatened by the present order of competitive development."

I subscribe most heartily to every word that Mr. Davis and Mr. Farish have said on this subject. In this period of great potential overproduction it is extremely important that your association and each individual operator act promptly in an effort to develop the unit plan. Please understand that so far as I am concerned, there is at this time no definite or fixed plan which will work satisfactorily in every pool, but a plan can be developed for each pool that will save every operator in that pool great sums of money.

The State of Texas should be very much concerned in this subject. The gross production tax brings into the treasury of the State enormous sums—for the first six months of this year it amounted to $2,794,526.70. What a difference it would make to the State if the prices for crude oil were given the same dose recently announced through the California fields.

The University of Texas should also be greatly concerned in this subject. It is at this time receiving approximately $175,000 per month in royalties. Imagine what the difference would be to it with a drastic cut in prices.

Blow at Conservation

The State set aside to the University of Texas more than 2,000,000 acres of

(Continued on Page 139)

*Before Texas Division, Mid-Continent Oil and Gas Association, at San Angelo, Tex.

Unit Operation Only Permanent Cure

Curtailment Agreements in Times of Overproduction Are Declared to Be Merely Temporary Expedients

By W. N. Davis
President, Mid-Continent Oil and Gas Association*

If all the economic troubles of the oil industry do not result from overproduction of crude they at least begin there. I have often heard it said that the oil industry is like any other in its problems of supply and demand and overproduction. I have always maintained and still maintain that this is not true. I know of no other industry producing raw material where an operator is forced to continue his development and production regardless of market conditions and against his better judgment or lose his reserves in the ground to his neighbor. This condition exists in the production of oil because oil pools are common reservoirs, and the oil and gas, not being fixed in place, can be drained from under the various properties through wells drilled on adjoining properties. Thus, each owner in a pool must drill if his neighbor drills, or lose a portion of his oil and gas.

These are simple elementary facts known to every oil producer, which have been so widely written and talked about that it would seem they must be known to everyone as well as to those who have for some years been interested in bringing about better economic conditions and prevention of waste in the industry. I cite them here to refute the statement that the economic problems of the oil industry are no different from those of any other and as a foundation for what I propose to say about unit ownership and unit development of oil pools.

Divided Ownership

The necessity for an operator to continue development and production against his better judgment, to which I have referred, obviously arises because of the divided ownership of the acreage of the oil pools. If a single oil pool was owned in its entirety by a single operator, there need be no problem of overproduction, and the business of producing oil would then be comparable to that of mining solid minerals. The operator could carry on in an orderly, intelligent manner, making thorough scientific and technical investigation of the area in order to secure the information essential to the best method of development and production, which would then be adjusted to meet the market demands. This would be the ideal situation, and it exists to a very large extent outside of the United States.

The economies in development which result under such conditions are: orderly and, therefore, more efficient development; the location of wells with due regard to structural conditions, thus securing a greater recovery of oil with a minimum use of the gas in production of oil, saving it for its natural market as fuel; this greater recovery coming from fewer wells, perhaps half now drilled in competitive pools; a greatly reduced number of dry holes, the elimination of duplication of machinery and facilities of all kinds, and of overhead expenses. Oil producers in foreign countries, carrying on operations of this kind, can produce oil at a fraction of what it costs to produce it in the United States, can test their potential areas, drill their producing wells, shut them in or control the production; thus creating their reserves ready at hand to meet demand from time to time as it may develop. In the United States, with divided ownership of oil pools, no such orderly and economic procedure is possible.

Industry Awakened

Gradually the industry has awakened to the seriousness of this situation, and a most gratifying spirit of co-operation in curtailment and proration of production has developed, but these are temporary expedients to ameliorate conditions in emergencies. Agreements to this end are difficult to attain and difficult in their administration. It is very gratifying that at this time producers in almost every important field in the United States are co-operating to maintain a balance between supply and demand of crude; but the agreements have time limits, and no sooner has one been accomplished than it becomes necessary to make plans for another at the expiration of the time fixed. Those who have worked hard and faithfully to bring these agreements about are to be congratulated on the results attained. These results are greater now than they have ever been in the past, but when all is said and done they are palliatives and not permanent cures.

The only permanent cure is common ownership and unit development of the common reservoir. It will take time, and its beneficial effects will not be immediately felt. It will be a matter of evolution and perhaps can never be fully attained, but the unitization of some of the pools is better than none, and a partial unitization of a pool will permit a measure of control which will be ample reward for efforts expended. I confidently believe that in time, as its great economies and stabilizing influence are more fully realized through experiences, it will become the universal practice.

Definite Program

Something less than a year ago the Kansas-Oklahoma division of the Mid-Continent Oil & Gas Association gave its formal approval to this plan and urged its members to refuse to buy spreads

(Continued on Page 139)

*Before Texas Division, Mid-Continent Oil and Gas Association, at San Angelo, Tex.

California Output Cut 185,000 Bbls.

Reduction in Prices Achieved Long-Sought Result and Then Posted Quotations Were Restored to Former Levels

By L. P. Stockman

LOS ANGELES, Calif., Nov. 11.—A drastic reduction in the posted price of crude oil successfully accomplished in a period of 10 days something that the California oil industry has been trying to do for the past several years by every other known method. And strange as it may seem, prices are right back up to where they were previous to the cut announced on October 21.

The restoration of price schedules followed on the heels of a curtailment in crude oil production which approximated 185,000 bbls. per day and brought state production down below the 700,000-bbl. mark for the first time in over a year.

The successful conclusion of this curtailment program marks a new era in the California oil industry as it is the first time that operators have been able to bring production and consumption within hailing distance of each other by artificial curtailment. It is all the more remarkable because of the fact that 185,000 bbls. per day have actually been restricted. There was no fooling around establishing a lot of meaningless potentials. Operators were told to pinch in 40 per cent of their present production if they wanted to get $1.50 a barrel instead of 60 cents, and they got to work.

Over 300,000 Bbls. Shut In

This new restriction in production brings the total crude oil curtailment in California well above 300,000 bbls. per day as more than 125,000 bbls. have been shut in for several years. California's daily production during the past week averaged 696,000 bbls., but this has been subsequently lowered and an additional reduction will be effected during this week or within the next 10 days. Current production is running somewhere in the neighborhood of 675,000 bbls. daily as compared with an output in excess of 850,000 bbls. per day on November 4 at which time the first actual curtailment was made. Operators in the Elwood Field of Santa Barbara County started pinching in during the latter part of October following a warning that prices would be cut unless an immediate reduction was effected. Seal Beach fell into line soon after and effected a 40 per cent curtailment on November 4. A few days later President Kingsbury, of the Standard Oil Co. of California, issued the following statement: "The Standard Oil Co. of California announces the restoration of prices it offers for crude oil produced at Seal Beach bringing the schedule back to the prices in effect prior to the recent cut of October 21. The advanced prices will be effective on all deliveries made on and after November 4, that being the date on which the production at Seal Beach was curtailed to the amount agreed upon in the general curtailment plan for Southern California flush fields. While the contract form under which this company purchases crude oil specifies that the price changes become effective 10 days after publication the company in this case waives that clause giving the sellers the immediate effect of the advanced prices. The increases in prices offered for crude oil at Seal Beach are approximately 50 cents per barrel."

Santa Fe Springs practically achieved its goal on November 6 at which time the actual 24-hour run aggregated 159,476 bbls. as compared with the established allowable production of 150,000 bbls.

Considerable difficulty was experienced in getting Long Beach into line due to the large number of individual holdings and also because three independent operators flatly refused to sign the curtailment agreement. These operators were still refusing to cut production at last reports and may jeopardize the entire curtailment agreement. Long Beach production was reduced to approximately 150,000 bbls. per day by November 7 in spite of this lack of co-operation. The Standard Oil Co. of California restored the old prices for both Santa Fe Springs and Long Beach on November 8. The Union Oil Co. took similar action and in addition re-established the original price schedule prevailing at Ventura Avenue previous to the cut of October 21. In place of the 40 and 60 cents oil operators at Santa Fe Springs are now getting from 80 cents to $1.65 per barrel depending upon the gravity of oil produced. The price schedule at Long Beach runs from 80 cents per barrel for 19 gravity oil up to $1.35 per barrel for 32 gravity crude and above. Prices at Ventura Avenue showed similar substantial increases, present quotations running from 80 cents per barrel for the lowest grade up to $1.28 for the highest.

Operators Witness Gauging

In carrying out crude oil curtailment in California, operators in several fields have revived the practice of having another interested operator witness the gauging of all run tanks in order to remove any doubt as to the exact quantity of oil produced. In the line-up at Santa Fe Springs, the St. Helens Petroleum Co. will witness all gauging done by the Union Oil Co., while O. J. Rohde will watch the Shell Oil Co. The Ring Petroleum will provide witnesses for the Standard Oil Co., and the Mohawk will take care of The Texas Company. Oscar Howard will keep a check on the Richfield Oil Co. and the Elliott Consolidated will be obliged to sign all gauge tickets of the Associated Oil Co. The Italo is paired off with General Petroleum; Sunset Pacific with George F. Getty; Union Oil Co. with Superior; George F. Getty with Wilshire; W. S. Kyle with H. R. Macmillan; Globe Petroleum with Rio Grande; Wilshire with Italo Petroleum; Bell View with Twin Bell Syndicate; Barnhart & Morrow with Star Petroleum; Richfield Oil Co. with Mohawk Petroleum; York & Smullin with St. Helens Petroleum; H. A. Bardeen with Sunset Pacific Oil Co.; Shell with Bell View; Superior with Oscar Howard; Universal Consolidated with H. A. Bardeen; Macmillan Petroleum with Globe Petroleum; Star Petroleum with Santa Fe Springs Oil Co.; General Petroleum with Cypress Petroleum; The Texas Company with Barnhart & Morrow; Standard with York & Smullin; Twin Bell Syndicate with Lockhart & York; Santa Fe Springs Oil Co. with the Allison Syndicate; Associated with Ring Oil Co.; York and Lockhart with Elliott Consolidated; Allison Syndicate with W. S. Kyle and the Rio Grande witnessing gauging by the Rohde Oil Co.

In addition to initiating the double check system of witnessing each other's production gauges, Umpire Grimm instructed operators to furnish other pertinent data in order to facilitate the compilation of necessary formation. He specifically instructed operators to immediately furnish gauge tickets showing gross and net production with casing and tubing pressures and bean sizes. Gauge tickets must be filed every day in the office of the umpire on the afternoon of the day the gauge is taken. Pipe line run tickets are to be supplied the umpire regularly by all pipe line companies running oil. On or before November 10 each operator must furnish the umpire with the daily production figures for all wells completed or recompleted since July 31, 1929, together with monthly production for the past 15 months, or portion thereof, of wells completed prior to July 31, 1929. The umpire is to be notified promptly of the completion of all new wells or the recompletion of old wells and this information must be followed by duplicate gauge tickets daily.

Limitation of Gas Waste

The successful consummation of curtailment activities which resulted in a substantial mutual artificial reduction of crude oil production has proven a source of considerable satisfaction to all progressive operators and efforts will now be concentrated on the second phase of California's conservation program which contemplates the limitation of gas waste. The crude oil curtailment effected in the Santa Fe Springs, Long Beach, Elwood, Seal Beach and Ventura Avenue Fields has greatly reduced the surplus quantity of natural gas which is being blown into the air but there is still an excess in spite of this commendable restriction. It is to eliminate this remaining surplus that future efforts will be directed and a preliminary survey indicates that success may be anticipated at least to some extent.

The reduction in surplus gas production accompanying recent curtailment work is of a sympathetic nature reflecting a restriction in crude oil production. This is due to the fact that all California natural gas is produced in conjunction with crude oil and any arbitrary reduction in the production as one commodity must of necessity be reflected in a corresponding drop in the other. The success which attended efforts to curtail crude oil production has proven a powerful stimulant and may ultimately result in the initiation of gas conservation. This projected gas conservation may be accomplished in several ways but right now gas storage and repressuring work offers the greatest hope of success. State officials have not relaxed in their efforts to enforce the California gas conservation law notwithstanding the stiff battle being waged by a small minority of Santa Fe Springs operators. This is evidenced by the fact that Attorney General Webb filed suit on November 8 to enjoin Long Beach operators from further wasting natural gas in violation of existing statutes. This is the third suit instituted by state officials, similar action having previously been started against operators at Santa Fe Springs and Ventura Avenue.

TEXAS OPERATORS CONSIDER CONSERVATION AT SAN ANGELO

By L. E. Bredberg

SAN ANGELO, Tex., Nov. 8.—The keynote of the Mid-Continent Oil and Gas Association meeting, Texas Division, which was held on the Roof Garden of the St. Angeles Hotel, San Angelo, Tex., this morning, was to further stabilize production. Approximately 200 oil men from various parts of Texas and Oklahoma were present when Mayor A. A. Glover of San Angelo welcomed the members, after President John F. O'Donohoe of Wichita Falls called the meeting to order.

W. H. Pullman served as secretary in the absence of Secretary J. P. Laney who was ill. The last meeting was held in Houston, last year.

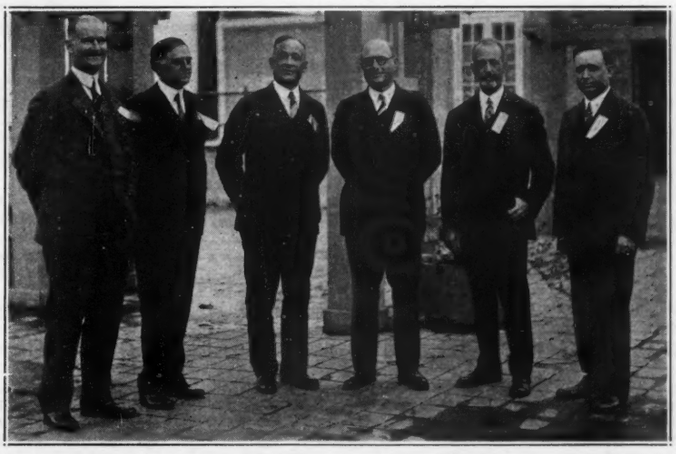
J. Edgar Pew of the Sun Oil Co., Dallas, introduced E. B. Reeser, president of the American Petroleum Institute, as "the man who has done most for the oil industry's program of conservation." Mr. Reeser's address to the association is published in full in this issue of The Oil and Gas Journal (page 38). His speech caused considerable stir among the board of regents of the university and state officials of Texas, but this is undoubtedly what Mr. Reeser desired, hoping it might have some effect in obtaining the desired results.

President W. N. Davis of the Mid-Continent Oil and Gas Association, spoke on unit operation, his address also being given in full in this issue of The Oil and Gas Journal (page 38).

Harry H. Smith, secretary of the

(Continued on Page 139)

LEADERS AT THE SAN ANGELO MEETING



Left to right: J. F. O'Donohoe, retiring president of Texas Division of Mid-Continent Oil and Gas Association; E. T. Moore, new president of Texas Division, Mid-Continent Oil and Gas Association; E. B. Reeser, president of American Petroleum Institute; Roy B. Jones, Panhandle Producing & Refining Co.; W. N. Davis, president of Mid-Continent Oil and Gas Association; and W. B. Hamilton, president of West Texas Chamber of Commerce, Wichita Falls, Tex.

Government Shows Curtailment Need

Large Additions to Storage First Nine Months. South American Refinery Expansion Factor in Imports and Exports

By C. O. Willson

The latest government reports with which it is possible to secure an accurate picture of crude oil production and refinery operations over the first nine months of this year clearly justify the action of operators who are now engaged in reducing the output of flush fields to the point where the production will not exceed the current demand.

While no accurate figures are available at this time it is certain that the practice of adding to crude oil storage which has been continuous from month to month so far this year will cease this month, provided the curtailment plans of California and Mid-Continent operators are carried out. It is impossible to make a direct comparison between the latest government figures which cover September operations and those at the present time on which the proration plans are being based. The government production figures are based on pipe line reports while current estimates are largely derived from well and lease reports.

It is apparent from the Government's reports which are summarized in the accompanying table for the first nine months of this year and compared with the same period last year that it will be better for the industry if the effective curtailment exceeds the actual requirements necessary to establish an equilibrium between the crude oil and demand. In order to prevent a collapse in the market structure for crude oil and refined products it has been necessary for some companies to add materially to their inventories of either crude oil or refined products or both and some relief from these accumulations is desirable before the industry can be said to have recovered from an extended period of overproduction.

California Dominates

This reduction of inventories is particularly desirable in California where the bulk of increased supplies both in crude oil and the principal refined products, have originated. For the country as a whole, crude oil production for the nine-month period extending from January 1 to October 1 exceeded the demand by 51,704,000 bbls., that quantity having been added to storage in this country.

This addition to crude oil inventories was at the rate of 189,000 bbls. daily. Of this total, 67,000 bbls. daily of this excess crude oil came from fields east of California and 122,000 bbls. in California. In brief, the rate of increase in California was almost twice as great as for the rest of the country. The California figure on stocks includes some refinery fuel oil.

The increase in stocks reflects the increased production. The domestic production of crude oil jumped from 666,107,000 bbls. the first nine months of 1928 to 758,999,000 bbls. for the same period in 1929, a gain of 92,892,000 bbls. Of this gain, 51,066,000 bbls. came from California and the remainder from the rest of the fields in the United States. Comparing this increase in California production with the increase in crude oil stocks it is evident that despite the increase in refinery operations on the West Coast there were no ready outlets for 80 per cent of this increased production.

California operators have made strenuous efforts to enlarge their outlets for their increasing supply of crude oil. The excess supplies in other domestic fields and the enlarged production of South American fields has nullified many of their efforts although California gasoline has been sold in many new areas—both domestic and foreign—over the past few months.

The wider market for gasoline has not materially aided the crude oil situation. The newer crude supplies in California which are responsible for the overproduction are generally higher in gravity than the older fields and this coupled with the expansion in cracking facilities has given the West Coast refiners a much larger yield of gasoline per barrel of crude oil run to stills. A comparison of the Bureau of Mines data covering September operations of this year and last illustrate the situation. California refiners in September of this year ran 20,960,000 bbls. of crude oil to their stills, an increase of 2,866,000 bbls. or 15 per cent over the same month last year. Gasoline production for September, 1929, totaled 7,947,000 bbls., which was 2,399,000 bbls. or 43.2 per cent greater than the same

(Continued on Page 149)

CRUDE OIL AND REFINERY PRODUCTS SITUATION SUMMARIZED

(Bureau of Mines Reports—First 9 months 1929 and 1928)

SUPPLY AND DEMAND—CRUDE OIL (Bbls.)

First 9 months	Total supply	Total demand*	Excess Supply	Excess Pct.	Domestic production	Imports	Domestic demand*	Exports	Stocks Sept. 30
1929	821,726,000	770,022,000	51,704,000	6.8	758,999,000	62,727,000	751,186,000	18,836,000	537,105,000
1928	725,456,000	704,369,000	21,087,000	3	666,107,000	59,349,000	690,638,000	13,731,000	486,930,000
Increase .	96,270,000	65,653,000			92,892,000	3,378,000	60,548,000	5,105,000	50,175,000
Increase	13.3%	9.3%			13.9%	5.7%	8.7%	37.2%	10%

*Derived from government data. Includes some California fuel oil.

SUPPLY AND DEMAND—REFINERY PRODUCTS—GASOLINE (Bbls.)

First 9 months	Total supply	Total demand	Excess Supply	Excess Pct.	Domestic production	Imports	Domestic demand	Exports	Stocks Sept. 30
1929	326,237,000	326,081,000	156,000	.5	320,095,000	6,142,000	280,984	45,097,000	33,222,000
1928	278,717,000	285,655,000	*6,938,000	*2.5	275,531,000	3,186,000	245,276	40,379,000	26,378,000
Increase .	47,520,000	40,426,000			44,564,000	2,956,000	35,708	4,718,000	6,844,000
Increase	17%	14.1%			16.1%	92.8%	14.5%	11.6%	25.9%
KEROSENE									
1929	42,242,000	42,379,000	*281,000	*.6	42,098,000	144,000	27,614,000	14,765,000	8,864,000
1928	44,632,000	43,754,000	878,000	2	44,505,000	127,000	26,802,000	16,952,000	8,593,000
Increase..	†2,390,000	†1,375,000			†2,407,000	17,000	812,000	†2,187,000	271,000
Increase	†5.6%	†3.2%			†5.7%	13.4%	3%	†13%	3.1%
LUBRICATING OIL									
1929	26,186,000	26,937,000	*751,000	*2.8	26,154,000	32,000	18,552,000	8,385,000	7,589,000
1928	25,947,000	26,065,000	*118,000	*.4	25,938,000	9,000	17,553,000	8,512,000	7,742,000
Increase .	239,000	872,000			216,000	23,000	999,000	†127,000	†153,000
Increase	.9%	3.3%			.8%	250%	5.7%	†1.5%	†2%
FUEL AND GAS OIL									
1929	350,499,000	334,744,000	15,755,000	4.7	336,525,000	13,974,000	307,220,000	27,524,000	150,656,000
1928	322,735,000	314,013,000	8,722,000	2.4	316,844,000	5,891,000	279,530,000	34,483,000	136,463,000
Increase .	27,764,000	20,731,000			19,681,000	8,083,000	27,690,000	13,041,000	14,193,000
Increase	8.6%	6.6%			6.2%	137%	9.9%	37.5%	10.4%
PETROLEUM WAX (Lbs.)									
1929	503,928,000	430,558,000	73,370,000	17	473,818,000	30,110,000	204,146,000	226,412,000	183,714,000
1928	481,926,000	547,147,000	*65,221,000	*12.1	464,248,000	17,678,000	232,501,000	314,646,000	85,417,000
Increase .	22,002,000	†116,589,000			9,570,000	12,432,000	†28,355,000	†88,234,000	98,297,000
Increase	4.5%	†21.3%			2.6%	70.3%	†12.1%	†28%	115%

*Excess demand. †Decrease. Note—Total supply equals domestic production plus imports. Total demand equals domestic demand plus exports. Data on demand for refined products are based on refinery shipments.

CRUDE OIL RUNS TO STILLS AND TOTAL ALL OILS (Bbls.)

First 9 months	Total crude to stills	Domestic crude to stills	Foreign crude to stills	Natural gasoline blended at refineries	Gasoline recovery crude oil†	Total supply all oils*	Total demand all oils*	Stocks all oils Sept. 30*
1929	737,594,000	678,626,000	58,968,000	32,940,000	43.4	882,834,000	818,617,000	677,421,000
1928	676,963,000	619,954,000	57,009,000	25,469,000	40.7	767,720,000	750,944,000	613,919,000
Increase..	60,631,000	58,672,000	1,959,000	7,471,000	2.7	115,114,000	67,673,000	63,502,000
Increase	8.9%	9.5%	1.4%	29.3%		15%	9%	10.3%

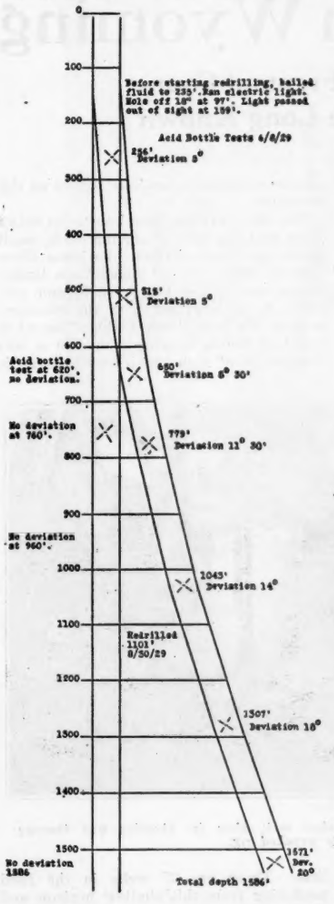
*Total all oils includes crude oil, refined products, natural gasoline and benzol. †Includes natural gasoline blended at refineries.

Miniature Rig for Crooked Hole Tests

Interesting Experiments Conducted by Union Oil Co. of California With Artificial Strata in Field Laboratory

Through improved drilling methods, developed within the past year, the field department of the Union Oil Co. of California, which has been one of the pioneers of the west in the advancement of drilling practices, has virtually eliminated the drilling of crooked holes and in so doing has accomplished something field men throughout the country have been striving toward since the use of the acid bottle and similar equipment proved that a very small percentage of the holes bored into the earth were at right angles to a true horizontal.

Within the industry, a number of things which cause holes, started straight, to veer off from the perpendicular, have been definitely catalogued and measures taken to overcome them. There are still, however, a few which must be subjected to further research. Many more fine points must be learned about drilling in general. In attempting to solve these drilling problems the Union Oil Co. has decided to take its experiments to the laboratory. The laboratory in this particular instance is a minature rig, a gas



Drilling chart No. 1 Buell. Diagram on the right shows appearance of well as it was originally drilled, and the one on the left the way it looks since being redrilled.

trap tower, 20 feet high, which has been erected on the Deminguez lease, where a series of drilling tests are now being conducted. Drilling tools and equipment used on the rig have been reduced almost to toy size.

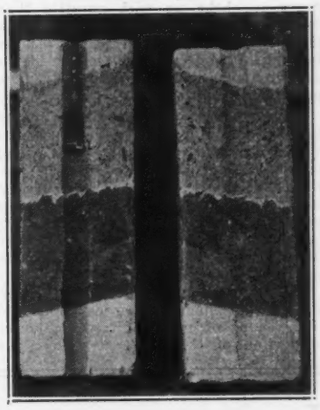
The idea of erecting a minature rig and conducting drilling tests originated with F. F. Hill, manager of field operations of the Union Oil Co., two years ago. The equipment used in this experimental work was built up by S. H. Grinnell and E. P. Tallant. First steps in the experiment were taken in July of this year, when building of the rig, which proved to be the simplest part of the operations, was begun. The real task lay in reducing rotary, spindle, drill pipe, drill collar, bits etc., to the proper proportionate size.

Then came the question of power and of regulating the weight on the drill. The power problem was solved by the installation on the top of the derrick of an half-horsepower electric motor equipped with a geared spindle. The gear on the spindle, in meshing with the reduction gear on the rotary, controls the revolutions per minute of the drill. A range of rotary speeds varying from 50 to 110 revolutions per minute, and weights from 10 to 40 pounds on the drill pipe, are to be used. These weights will be tested at various speeds of the spindle and in each formation.

Preliminary Experiments

From the drilling tests being made at Dominguez, it is hoped to determine the effect of formational dips on the drill; what happens when too much weight is placed on the drill; at what speed the drill should be rotated in various formations to get the best results, and the relationship to be maintained between speed and weight on the drill.

Preliminary experimental work with the equipment has been completed and a few drilling tests have already been run. In preparation for the tests to be conducted within the next few months, approximately 100 blocks, 30 inches thick, and composed of gravel, cement, sand, and



Test block sawed in two after being drilled revealing various formations simulated in the block. The formations represented are gray sand, conglomerate, brown shale, streaks of shell, and hard gray sand.

clay mixed in various proportions to represent nine different formations encountered in drilling the average oil well, have been moulded. These formations are pitched in the blocks to represent tilted formations found in actual drilling, and are of varying thicknesses. The formations represented are hard sandy shale, medium and soft sand shale, hard, medium, and soft sand, and hard, medium and soft shell.

The blocks are numbered and as soon as they are drilled, will be sawed in two so the progress of the drill as it passed through the different formations can be observed. Complete data are being tabulated on each test block.

At the same time the field department is carying on its experiments with the miniature drilling outfit at Demingues in the hope that further drilling refinements can be developed as a result of the tests being made there, actual drilling in the field has demonstrated that there is no longer a legitimate excuse for completing a crooked hole.

Decidedly Warped Hole

In its No. 1 Buell, being drilled several miles southeast of the present Lompoc Field, the Union Oil Co. has a splendid example of just how crooked a crooked hole can get, and the means now being employed by the field department in straightening holes of this kind.

The Buell well is being drilled in extremely hard formations pitched at varying steep angles. After the well had been drilled to a depth of 1,586 feet the hole began to show signs of being decidedly warped. Before starting to redrill, the fluid in the well was bailed to 235 feet and a light test made. At 159 feet the bulb passed out of sight. Acid bottle

(Continued on Page 148)

Potential Missouri-Kansas Oil Fields

Increasing Interest in Territory South of Kansas City and Even Within City. Growing Gas Development

By L. G. E. Bignell

KANSAS CITY, Mo., Nov. 11.—When a metropolitan area having a population of approximately 675,000 people has a gas field at its very boundaries and it even appears probable that these gas bearing structures will extend into and under the city itself it is indeed fortunate.

Such is the situation at Kansas City, Mo., for that city and Independence, Mo., are served largely by gas that is delivered to the distributing lines within the city by the Missouri-Kansas Pipe Line Co., formed in May, 1928, and now owning and operating in those states and in Kentucky 160 miles of pipe line and 330 miles of gathering lines.

The presence of shale gas in this area has been known for 12 or 15 years and has been produced in a small way in many places and the gas used for domestic purposes to serve a few families in the immediate vicinity of the wells.

It is also stated that the second oil field in the United States was discovered in the vicinity of Paola, Kans., in 1882, and this district is now included in the gas area that serves Kansas City.

The fields that are adjacent to the city limits of Kansas City and therefore of particular interest because of their position are located at Bannister Ridge, Lees Summit, and Blue Ridge, Mo., about 20 miles southeast of the city.

The elevation at Kansas City is approximately 750 feet above sea level, and the surface geology done on the area between Lees Summit and Blue Ridge shows a structure there that has an elevation of approximately 950 feet.

This structure is made up of a few anticlines with small closures and many noses or plunging anticlines, with normal basins and synclines in between. The surface work has been done on the Winterset lime, because the upper part of the Kansas City formation has been eroded away in that area.

A type log of the Jackson County, Missouri, area in which Lees Summit and Blue Ridge districts are located is given below:

Surface—Winterset lime.
Bethany Falls lime.
Hertha lime.
Shales.
Altamont lime.
Stray gas sand.
Pawnee lime.
Shales.
Gas sand at 280 feet below base of Hertha lime.
Oswego of Fort Scott lime.
Shales.
Bartlesville (1 to 3 sand lenses).
Cherokee shales.
Burgess sand.
Mississippi lime at 705 feet below Hertha lime.

These lime strata vary in thickness and are interspaced with sands and shales in lenticular beds and at a depth of about 280 feet in the Lees Summit district the first real gas sand is encountered, although occasionally a stray gas sand is picked up between the Altamont and Pawnee limestone formations.

These shallow wells come in for an average of about 800,000 feet of gas daily at a rock pressure of 90 pounds per square inch at casing head and a total of 85 wells, making 50,000,000 feet of gas, are now producing at Bannister Ridge in Jackson County, and 30 wells in the Lees Summit-Blue Ridge district are making about 25,000,000 feet daily, all of which is going into the distributing lines at Kansas City.

It has been found that the producing horizons follow the surface contours of the Winterset formation very closely in the Jackson County area and below the 280-foot gas sand level comes the Fort Scott or Oswego lime series with the Bartlesville sand lenses, about three in number, occupying between the Oswego and the Mississippi lime, which is found at approximately 705 feet below the base of the Winterset limestone series.

This condition indicates that this ridge or series of ridges has a general northeast-southwest trend of axes and the gas pools have been traced and opened across the Missouri-Kansas state line in a southwesterly direction into Franklin and Anderson Counties, Kansas.

The Kansas Geological Survey of Anderson County, Kansas, states that the outcrop in that area is the Douglas formation and gives the following type log of that area:

Douglas formations:
Oread lime.
Lawrence shale.
Iatan lime.
Weston shale.
Lansing formations:
Stanton limes.

(Continued on Page 146)

Electric Heaters Remove Paraffin

Used for Removal of Paraffin From Wells With Good Results. Progress of Research

By L. G. E. Bignell
Petroleum Engineering Editor

The completion of a producing well is hardly finished before the production department has numerous problems presented to it for handling, because if the well is flowing naturally by energy supplied by the compressed gas that accompanies the oil, the present day petroleum engineer immediately starts to conserve this energy by reducing the gas-oil ratio to that point where the gas can be made to lift the oil for the longest possible period.

If, on the other hand, the well has little gas but flows because of energy derived from a hydrostatic head of water adjacent to the oil body, the problem resolves itself into one of securing the oil without drawing into the well the water that lies so close to it in the formation.

Other problems follow one another in rapid succession as the well changes its status of production and gradually approaches the pumping stage the necessity of cleaning it of foreign materials that have accumulated in the hole becomes one of paramount importance.

Well scraper for removing paraffin from walls of hole. Used in Borger district, Texas.

In some cases where the wells are producing crude oil that has a relatively high paraffin content this need for cleaning makes itself apparent early in the life of the flowing well for it has been found that this waxy material will crystallize out of the fluid oil quite readily with changes in pressures and temperatures.

Deep wells such as are now being drilled in many parts of this country and abroad seem to have a greater tendency to choke up with paraffin than some of the shallower ones and this may be due to the fact that the oil usually found in these deeper wells is of a higher gravity and carries proportionately more paraffin in solution.

This condition is undoubtedly due to the fact that this deep well oil has been subjected to higher temperatures and pressures than oil found nearer the surface, as these deep seated structures seem to have been more sharply folded and the pressures applied to these stratas has been such that the hydrocarbons have been "cracked" in natural high pressure stills.

In the refinery it has been demonstrated that higher pressures applied to the refining of crude oils gives a larger proportion of the lighter fractions per barrel of oil treated, and it would therefore seem quite logical to conclude that higher temperatures and pressures underground would have much the same effect in refining the original products from which the petroleum has been distilled.

Chilling Effect

This condition of higher temperatures and greater percentage of paraffin has caused the wells to give trouble due to the temperatures lowering as the oil neared the surface and the waxy fractions being precipitated out and depositing on the casing or open hole and gradually closing the opening.

Further, as the gas expands and its pressure is lowered it has a chilling effect upon the fluid that is accompanying it and, with the melting points of paraffin in its crude state relatively low, this drop in temperature of the gas draws heat from the fluid with the result that the wax is precipitated.

C. E. Reistle, Jr., gives the following table of melting points of crude paraffins:

Field—	Sand	Melting point (° F.)
Salt Creek, Wyo.	2d Wall Creek	165.4
Lance Creek, Wyo.	Dakota	181.0
Panhandle, Tex.	Granite wash	141.2
Marietta, Ohio	Macksburg stray	135.2
Clay dist., W. Va.	Big Indian	161.9
Bradford, Pa.	Third sand	132.1

With this typical range in melting points of paraffins it is easy to understand why oils that are produced from deep wells with temperatures as high as 170 degrees Fahrenheit and about 57 degrees A.P.I. gravity will drop the solids as the gas expands and cools.

Low Gas-Oil Ratio

The more gas that is produced per barrel of oil the greater number of B.t.u. will be taken from the oil to satisfy the lowering temperature of the expanding

(Continued on Page 146)

Important Discovery in Wyoming

Kinney Coastal Test on Pilot Butte Dome, Fremont County, Attracting Much Attention. Structure Long Known

By Tolbert R. Ingram

DENVER, Colo., Nov. 11.—The latest important oil and gas discovery in Wyoming, that of Kinney-Coastal Oil Co. on the Pilot Butte Dome in Fremont County, is only 42 miles from the first discovery in the State of which there are authentic records. The first discovery was in 1833, almost a century ago, when Capt. B. L. E. Bonneville, during his excursion into the then unmapped northwest, observed oil oozing from natural springs in the valley of the Little Popo Agie River, in what is now Fremont County. His report to the war department records the discovery and designates the district as "Oil Spring." This name long ago fell into disuse and the locality now is known as the Dallas oil field. The latest discovery was in the Kinney-Coastal Oil Co.'s No. 1 Dykeman, SE SW Section 22-3n-1w, on the Pilot Butte Dome, almost in the center of Fremont County and 42 miles north and a little west of the one reported by Captain Bonneville.

The location of the Pilot Butte Dome is interesting from several standpoints. A line drawn in a north and south direction across a map of the State of Wyoming from the Elk Basin Field near the Montana line to the Hiawatha Dome on the Colorado-Wyoming boundary will bisect a territory that has been the scene of more wildcatting than any other area in the Rocky Mountain states. Within 30 miles of this north and south line, either on the east or the west, are more than 75 structures which have been mapped. These extend all the way from Montana to Colorado. Many of these have been tested, a number of them have proven productive for oil or gas, or both, and a few of them have never been drilled. Within this 60-mile strip across the State are such fields as Elk Basin, Oregon Bason, Frannie, Byron, Garland, Grass Creek, Little Buffalo Basin, Maverick Springs, Big Sand Draw, Dallas, Hudson, Baxter Basin, Hiawatha, Golden Eagle, Alkali Butte, and several others, all producers of oil or gas, or both. Most all of these proven structures are underlaid with horizons which have never been tested. The Kinney-Coastal discovery is almost in the exact center of this north and south line.

Structure Long Known

The Pilot Butte Dome is located in the Wind River Indian Reservation and there are no government permits involved.

Kinney Coastal Oil Co.'s No. 1 Dykeman after well blew in, showing gas flowing through the badly wrecked rig.

There is some fee land on the structure and the remainder is held under leases from the Shoshone Indians. The surface of the surrounding country is a large and fertile valley that is extensively farmed. There are numerous streams in the valley and these abound in trout, while game of many kinds is to be found in abundance. The Wind River crosses the structure and flattens out, forming several islands. The highway to the new Teton National Park and the southern entrance to the Yellowstone National Park also traverses the dome. The intake ditch of the Riverton Irrigation Project, one of the federal government's largest reclamation projects, starts on the structure.

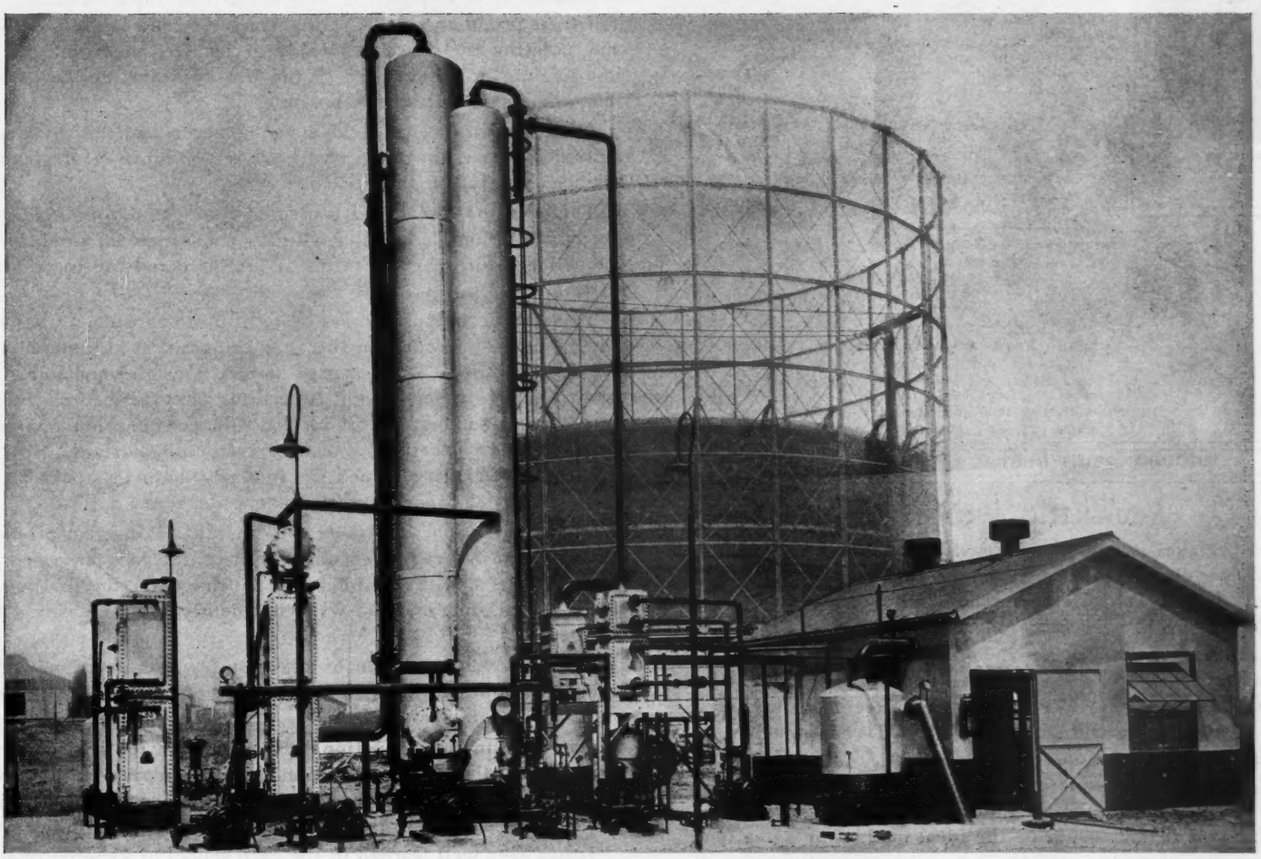
The structure has been known for many years and has been producing oil in small quantities from shallow horizons since early in 1917. The oil comes from lenticular sands in the Pierre shale and correlate to some extent with the Shannon sand in the Salt Creek Field. The oil is found at depths ranging from 600 to 900 feet and is of high gravity with paraffin base. There are 27 wells in the field producing from this shallow horizon and the output at present averages around 100 bbls. a day. The Illinois Pipe Line Co. has a 29-mile 3-inch pipe line from the field to Riverton. Several years ago this company applied to the public utilities commission for permission to take up the line, but this was denied.

Deeper Tests

Following the discovery of oil in the shallow horizons, the Midwest Refining Co started a deep test in the NW cor. SW SW Section 22-3n-1w. This well, which was drilled in 1917, was aban-

(Continued on Page 147)

• SOUTHWESTERN • VAPOR RECOVERY PLANT



SOUTHWESTERN VAPOR RECOVERY PLANT AT THE REFINERY OF ONE OF THE LARGE INDEPENDENTS OF THE PACIFIC COAST

Salvaging Vapors which would otherwise be lost . . . reducing the Fire Hazard from such gases . . . obtaining therefrom 2000 to 3000 gallons of gas per day.

SOUTHWESTERN ENGINEERING CORPORATION

606 SOUTH HILL STREET
LOS ANGELES, CALIF.

605 MAYO BUILDING
TULSA, OKLAHOMA

117 LIBERTY ST. ◆ NEW YORK CITY ◆ ROOM 1606
ROOM 1217 MAGNOLIA BLDG., DALLAS, TEXAS

TRANSPORTATION BLDG.
MONTREAL, CANADA

The OIL and GAS JOURNAL

PRODUCING REFINING ENGINEERING MARKETING

Published Weekly by
THE PETROLEUM PUBLISHING COMPANY
114-116 West Second Street
TULSA, OKLA.

Established as an International Publication in 1910 by Patrick C. Boyle.

President - - - - - - - - - - - - Frank T. Lauinger
General Manager - - - - - - - - - John M. Egan
Editor - - - - - - - - - - - - - James McIntyre
Managing Editor - - - - - - - - - Andrew M. Rowley
Refinery Editor - - - - - - - - - - C. O. Willson
Technical Editor - - - - - Charles K. Francis, Ph.D.
Petroleum Engineering Editor - - - - - L. G. E. Bignell
Associate Editor - - - - - - - - - W. T. Anderson
Associate Editor - - - - - - - - - W. T. Ziegenhain
Associate Editor - - - - - - - - - Thomas F. Smiley
Advertising Manager - - - - - - - E. Klappenbach
Circulation Manager - - - - - - - - J. P. Mulkern

DISTRICT ADVERTISING OFFICES

C. L. CAIN - - - - - - 101 Park Ave., NEW YORK CITY
L. AUSTIN DE VORE, 1328 Peoples Gas Bldg., CHICAGO, ILL.
ALVIN E. LOEFFLER, State Theater Bldg., PITTSBURGH, PA.
C. R. JOHNSON - - - - - - - - - - - - -

A Cold Fact!

Expansion and contraction due to greatly varying temperatures as well as the extremely high pressure under which it will operate is provided for on the Amarillo, Texas to Denver, Col. Natural Gas Line thru the use of Dresser Couplings

S.R. DRESSER MFG. COMPANY
BRADFORD, PENNA.

DRESSER COUPLINGS
DOMINATE!

Moisture in Calcium Grease Making

Practical Study of 70 Samples Gives Important Data Regarding Importance of Water Content in Performance

By Fred C. Otto

Among the various factors which influence the consistency of a cup grease the moisture content is thought to be one of major importance. The purpose of this paper is confined exclusively to the role which is played by the water content of calcium cup greases in regard to their consistencies.

Cup greases, high pressure greases, slow flow greases and liquid greases consist of a mineral lubricating oil thickened by a calcium soap, or occasionally by a sodium soap or a mixture of both. Transparent greases, which are generally prepared by dissolving aluminum stearate or aluminum oleate are not subject of consideration in this paper. The data in this article are confined exclusively to calcium greases.

From the standpoint of the marketer as well as of the ultimate user the consistency or body of a calcium grease is the most important property, more important than melting point, appearance, grade of mineral oil used or kind of fatty materials used in the saponification. Greases with unstable consistency will contain oil pockets and will "bleed" after a few months of storing and are certainly no builder of repeat business.

The dealer is very seldom interested in the chemical and technical properties of his high pressure grease or the medium cup grease. What he wants most is a material suitable to go through the greasing equipment without clogging the filter and having at the same time sufficient body and consistency to stay put in the bearings.

In industrial lubrication the maintenance of a uniform consistency is highly important because even small differences in consistency affect the rate of feed of the grease to the bearings. Excessive feed due to too soft a consistency will result in waste, whereas too hard a consistency might be responsible for a burned out bearing or a frozen overhead transmission.

The manufacture of cup greases of uniform consistencies is not easy, because the consistency depends upon a large number of different factors. Cup grease is a colloidal gel structure and such a structure is subject to great variations, with changes in composition and conditions of manufacturing.

Importance of Water

Water is a very important ingredient in the manufacture of a calcium cup grease, for its hydrates the calcium soap and makes it insoluble in the mineral oil. It is known, that in the manufacture of set grease, made from rosin or rosin oil, saponified by lime, the water content is sometimes as high as 25 per cent and it is also true, that a few tallow compounds and also a few water pump greases are on the market, which contain from 15 to 20 per cent water, but in those cases the water acts as a filler. In the regular boiled lime cup grease water as a filler is unknown and the moisture is kept as low as possible.

An excess of water produces smoky appearance, influences the consistency and acts as an accelerator for the oxidation of free fatty acids in the grease. It also tends to increase the bleaching of a dyed grease. An excess of water is under all circumstances of great disadvantage.

An insufficient amount of water in a calcium grease tends to form colloidal solutions. If the water content is near the lower limit, the gel structure is very pronounced, but is easily broken down by mechanical working to give a mixture of comparatively low viscosity. If the water content is below the lower limit the already formed gel may either be destroyed or may refuse to form and the grease will have very little body. If a calcium grease does not contain any moisture or if the moisture content is insufficient, the soap is in the unhydrated form and goes into true solution in the oil, instead of forming a gel together with the mineral oil, the latter being enclosed by millions of tiny soap drops.

A normal water content is an absolute necessity for a well made calcium grease. For this reason a batch of grease is mostly held in the kettle until the laboratory has tested the grease in regard to moisture A grease may sometimes show, in the laboratory, the proper moisture content, but from actual appearance there seems to be something wrong with it. This will generally happen, when, during the boiling process, too much water has been evaporated and the added water remains in the free condition merely as an emulsion instead of becoming an integral part of the soap. In such a case the consistency of a grease is always lower than it should be.

The following table lists a few specifications as to the moisture content of cup greases:

Grease No.	Maximum water content per cent	Specified by:
0	3	U. S. Army, Q.M. Corps
0	3	U. S. Government
0	0.5	General Motors Corp.
0	2.5	Mexican Railway System
1	3	U. S. Government
1	1	General Motors Corp.
2	3	U. S. Army, Q.M. Corps
2	2	City of New York
2	1	General Motors Corp.
3	3	U. S. Government
3	2	U. S. Navy
3	1-3	City of New York
3	1.5	General Motors Corp.
4	2	General Motors Corp.
5	3	U. S. Government
5	2.5	General Motors Corp.
5	2	U. S. Navy

Practical experience founded upon grease making for over 15 years has shown that for calcium cup greases made from horse fat, hog fat, lard oil, or tallow oil or any combination of this soap stocks, the moisture content of the finished grease should be as close as possible to the percentage given in the following table:

Cup grease No.	Normal moisture content per cent
5	2
4	1.8
3	1.4
2	1
1½	0.8
1	0.6

Analysis of Greases

This moisture content is based entirely upon practical experience. Since it is known that grease making is still an art rather than a science, the writer has made a survey over a period of six months covering 103 batches of grease each of 35 drums for the purpose of gathering reliable material in regard to the question of how far does the water content influence the consistency. Of the 103 batches 70 were made from 300 viscosity Texas red zero oil and 33 batches were made using a nonviscous neutral of 80-90 viscosity, having 30 cold test and No. 2½ color. For the sake of simplicity and

(Continued on Page 166)

Gasoline Gum Content Important

Trend Toward Antiknock Motor Fuels Responsible for Situation. Results From Tests Not Uniform

By Peter Vilkas and L. P. O'Neill
Producers & Refiners Corp.*

In the presentation of this paper we make no effort to prove or disprove any of the present work that has been done on gums in gasolines. At such an early stage in the investigation of a subject as intricate as this has proven to be, we would be very irrational to state as facts the conclusions we draw from our work. It is our idea to deliver to you our experiences on testing for gums, to give our conclusions for your discussion in order to stimulate an interest and stress the importance of gums that more research will be done on this problem that confronts the refiner, automobile manufacturer and the public more each day.

As long as straightrun gasoline predominated as a motor fuel and motor design giving a low compression rate was used, the problem of gum formation in the motor was negligible and of little importance.

With the continually increasing tendency toward the design of higher compression motors, the production of higher antiknock gasoline came into importance.

With the production of such gasoline which is usually done by cracking the heavier fraction, the problem of gum also came into importance. Recent development in vapor phase cracking and higher temperatures in liquid phase for the production of the high antiknock quality of motor fuel, are usually accompanied with the production of gum-forming hydrocarbons. The development of the test for these unstable hydrocarbons is of importance to the manufacturer and distributor of such motor fuels.

Gasoline containing tetraethyl lead offers only temporary relief to the automobile manufacturers who are developing higher compression ratio motors, for its use is limited by regulations governing the maximum amount of tetraethyl lead that may be added to a motor fuel. With the development of still higher compression motors the use of tetraethyl lead as a remedy for detonation is becoming insufficient. So the future for the refiner is to produce motor fuels which themselves possess high antiknock qualities and the production of such fuels will result in greater quantities of gum-forming hydrocarbons being present in the gasoline.

Another new feature in motor design that brings about conditions favorable to "gum" formation in the motors is the elevation of the manifold temperatures to afford the utilization of heavier fuels. Motors operating at higher temperatures have a tendency to form more gum than those operating at lower temperature. Foreign make cars which are usually operated at higher temperature than the domestic make, experience much more trouble from gumming. The airplane motor is another example, the higher temperatures being so conductive to gum formation as to attract government attention to investigate the maximum allowable gum content for use in their air motors.

The refiner of today is confronting the fact that in each new development toward motor perfection, conditions are made more favorable for the productions of gums in the motor.

Interpretation of Tests

At present there are three methods recognized for the determination of gums in gasolines; copper dish test, steam over test, and the oxygen gum test. The results of these tests are not indicative of the amount of gum that will form in the motor while using the gasoline.

The copper dish test, in which a measured quantity of gasoline is evaporated to constant weight, on a steam bath indicates closer than the other methods, the sensitivity of the hydrocarbons present, to oxidation. It is however, open to many variations such as catalytic effect of copper, the time necessary for evaporation, the quantity of air passing over it due to currents in the room, and etc. The results are difficult to check and do not indicate the amount of gum that will form in the motor where oxidizing conditions are entirely different from that in the copper dish. By this method the heavier gasolines show more gum than the lighter ones, which is to be expected since the rate of evaporation of the heavier gasolines is much lower, so the vapors are subjected to a longer period of oxidation.

In the steam oven test a measured sample of gasoline is poured into a suitable container and evaporated in a steam oven at temperatures approximately from 300 to 370 degrees Fahrenheit. This test excludes the oxygen of the air preventing oxidation of the gasoline during its evaporation. When gasolines are tested by this method the resulting gum deposits are almost negligible, since air is excluded the only gums deposited are those which were formed prior to the test, either during the processing of the gasoline or after its storage. Gum determined in this manner has been referred to as "actual gum" by recent investigators to differentiate between it and the hydrocarbons present, in the gasolines, that can be easily oxidized to form gum. The latter products being termed potential gum. No relation exists between the amount of gum determined in this manner and the amount of gum to be expected in the motor. Recent work by the writers using the steam oven method to determine the gum content of several premium gasolines showed that the actual gum was very small, yet on the gasolines tested complaints of their gumming effect in motors had been registered. Also this actual gum being now volatile would be deposited close to carburetor and not around the intake valves.

Oxygen Test

The oxygen gum test is a method recently developed by Voorhees and Eisinger for the determination of both the "actual" and "potential" gum. By their method the gasoline is poured in a long neck boiling flask, the air displaced by a steam of oxygen, the flask closed with a rubber stopper, and oxidation allowed to take place for five hours at the temperature of boiling water. The oxidized gasoline is then transferred to an evap-

(Continued on Page 170)

*Manufacturers meeting, Western Petroleum Refiners Association.

There is a substantial breach between quality, cost and selling price of straight distilled gasoline and Dubbs Cracked Gasoline

And the breeches are full of profits for the refiner who uses the Dubbs Cracking Process

Universal Oil Products Co
Chicago, Illinois

Dubbs Cracking Process
Owner and Licensor

THE OIL MAN'S CALENDAR

November 12-15.—Toronto, Canada, Transportation meeting, Society of Automotive Engineers, New Royal York Hotel.

November 30.—Chicago, meeting A.P.I. Technical Committee on Prevention of Pollution.

December 3-5.—Chicago, tenth annual meeting, American Petroleum Institute, Stevens Hotel.

December 4-7.—Washington, convention, American Mining Congress.

December 5-6.—Indianapolis, meeting, Indiana Petroleum Association.

December 11-13.—Omaha, Neb., convention, Nebraska Independent Oil Men's Association, Paxton Hotel.

December 12-13. — Washington, ninth annual meeting, Highway Research Board.

December 16-17. — Washington, American Pharmaceutical Manufacturers' Association, Hotel Washington.

January 4-11.—New York National Automobile Show, Grand Central Palace.

January 11-18. — Atlantic City, convention, American Roadbuilders Association.

January 21-24.—Detroit, Mich., annual meeting, Society of Automotive Engineers, Book-Cadillac Hotel.

January 25-February 1.—Chicago, National Automobile Show, Coliseum.

February 19-21.—Columbus, Ohio, Ohio Petroleum Marketers Association, Deshler-Warwick Hotel.

March 19-21. — Detroit, convention, Michigan Oil Men's Association, Statler Hotel.

Late Fields

WILDCAT HAS SHOWING

SHREVEPORT, La., Nov. 12.—R. L. Gay, trustee, No. 1-A Bowman Hicks, 12 miles east of the Zwolle Pool in Louisiana, found a good showing of oil and gas in chalk rock at 2,405 feet, and it is believed the test will make a commercial producer. Wells in the Zwolle Poole are showing a steady increase in production instead of recording a decline as is usually the case. Gay's No. 1 Bowman Hicks, a producer 1 year old, is still flowing 142 bbls. daily and registering a slight increase every day. No. 3, brought in last May making 100 bbls., is now producing 110 bbls., while No. 4, completed October 6 as a 130-bbl. pumper, is now flowing at the rate of 200 bbls. daily.

GULF COAST

HOUSTON, Tex., Nov. 12.—Two wildcats, one in St. Landry Parish, Louisiana, and the other in Cameron Parish, opened new Gulf Coast production Monday. In the former parish Gulf Refining Co.'s No. 2 Guadet on the Port Barre Dome came in for an estimated 2,000 bbls. daily of pipe line oil from sandy shale at 3,410 feet, and at Black Bayou, Cameron Parish, Shell Petroleum Corp.'s No. 12 Watkins flowed 921 bbls. in sandy shale at 5,206-21 feet. The Port Barre well, which was allowed to flow only a short time before being shut in for storage, is on the west side of the dome. The Texas Company previously had completed two wells there, one of which is flowing, but these were on a different part of the dome. The Black Bayou well is on the south side of the dome and is the first test drilled in that

(Continued on Page 152)

Instructs Pipe Lines To Enforce Proration Wherever Necessary

Proration of production in the Oklahoma City, Greater Seminole, and Logan County areas, which constitute the flush areas in Oklahoma is progressing satisfactorily according to Ray M. Collins, umpire, acting under the orders of the Oklahoma Corporation Commission.

The proration plan has been in effect long enough for Mr. Collins to get a line on who is prorating and who is not, and he has given each of the pipe line companies a list of the leases from which they run oil where proration in October was not strictly observed. The lists tendered the pipe lines designate the quantity of oil run in excess of proration orders in October and the quantity the pipe line should run in November to bring the leases down to their quota.

It has been found necessary in some of the pools to change the method of determining potentials because of the rapid decline in the natural production of the pool. Up to November 1 it was found that many of the leases could not produce their allowance, even when produced to their capacity, which fact made a change in determining potential imperative. It is expected that the results in November will be even more satisfactory than in October.

As a general rule the producers are carrying out the orders of the Corporation Commission willingly. Here and there an exception is noted, but pipe lines which were ordered by the commission to run no oil that was produced contrary to the commission's proration order are co-operating in making proration quite general.

Oklahoma City operators have done nobly, according to Mr. Collins. And he pointed to last week's average of less than 38,000 bbls. per day. Oklahoma City is expected to show some increase this week as all the wells in the A and B were permitted to produce on Sunday and Monday in accordance with the plan adopted in that pool, and the big well of the Indian Territory Illuminating Oil Co. was expected to be given a 24-hour test if the oil could be taken care of.

A new well in Section 5-7-7, Seminole County, drilled by the Mid-Continent Petroleum Corp. which came in at 100 bbls. per hour from the Cromwell sand, was shut in and will remain shut in if no other work is started. On Tuesday most of the near-by lease owners promised to withhold drilling operations and it was expected that all would be brought into line. The new well is on a Wilcox sand lease on which there are 11 wells producing from the deeper sand. No. 13, the new well, is the first Cromwell sand well in that part of the field.

Umpire Collins will permit the completion of a number of edge wells in East Earlsboro, but they will be permitted to produce only 24 hours at the end of which time they will be completely shut in.

HEARING POSTPONED

LOS ANGELES, Calif., Nov. 12.—The District Court of Appeals has postponed the hearing on the Santa Fe Springs gas conservation case until Wednesday, November 13.

SON OF OIL MAN DIES

Clarence Wright, age 10, son of C. H. Wright, president of the Sunray Oil Co., died in Tulsa Sunday and was buried Monday afternoon.

OKLAHOMA P. L. STATEMENT

The Oklahoma Pipe Line Co.'s report for October shows crude oil runs of 3,787,262.59 bbls., daily average 122,169.76 bbls.; shipments 3,312,129.15 bbls.; daily average 106,842.88 bbls. crude oil stocks November 1, 3,889,443 bbls. or 445,901 bbls. more than on September 1.

High Spots in Field News

KANSAS.

Proration of runs in flush fields results in further lowering of production.

CALIFORNIA

Substantial decline in production follows agreement on conservation. Gas law case again postponed.

EAST CENTRAL TEXAS

Two more tests promised for Van Zandt County Pool where plans for unit operation are going forward.

NORTH LOUISIANA-ARKANSAS

R. L. Gay's well, 12 miles east of Zwolle Pool, found good oil showing. Wells in Zwolle Pool steadily increasing in production instead of declining.

NORTH TEXAS AND PANHANDLE

Wildcat between Mills Pool in Baylor County and Pandem Pool in Archer County may link these areas.

Gray County's latest wildcat attracting interest to western side of county.

OKLAHOMA

Mid-Continent Petroleum Co.'s No. 13 Smith, East Little River Pool, twin to No. 12, made 2,680 bbls. from Cromwell sand, only Cromwell sand well on lease which has 12 Wilcox sand producers.

Proration brings production below desired figure but may increase this week.

SOUTHWEST TEXAS

Magnolia well may close 5-mile gap at Darst Creek.

ROCKY MOUNTAIN AREA

Eddy County, New Mexico, well, in Maljamar Field, flows for 12 minutes, shooting column over crownblock.

Continental company resumes work on Boundary Butte, Utah.

GULF COAST

Wildcats in St. Landry Parish and Cameron Parish opened new production. Gulf company's well in St. Landry estimated 2,000 bbls. Shell corporation's well at Black Bayou flowed 921 bbls.

Humble deep sand holds attention. Shallow oil sand on Danbury prospect, Brazoria County. Extension at Raccoon Bend. More tests at Mykawa.

WEST TEXAS

Big Lake company's No. 4-C University, third deep producer in Big Lake Field, Reagan County, flowed 310 bbls. with 6,000,000 feet of gas in 24 hours with tools stuck in hole.

New wildcat area opened in Pecos County, 4 miles south of Buena Vista. The nearest test is 3½ miles south.

Another dry hole in Rowan and Tong area while Taylor-Link has couple of producers.

HUMBLE WILL CORRECT FOR VOLUME ON ALL OIL PURCHASED IN TEXAS

By Neil Williams

HOUSTON, Tex., Nov. 10.—The Humble Oil & Refining Co. has announced that effective December 1 its practice of computing the quantity of crude purchased on a basis of 60 degrees Fahrenheit will be applied in all districts and fields in which it buys crude. This practice has been in effect for some time on the Gulf Coast, was adopted for Panhandle and West Texas fields on September 1 and for the Luling and Southwest Texas districts November 1. Now it is to be extended to Ranger, North Texas and East Central Texas fields, the only areas in which the plan already is not in operation.

The practice, which was suggested some time ago by the Texas State Railroad Commission and which is being put into effect by the Humble Oil & Refining Co. and which probably will be adopted by other major purchasers, is a means of taking into consideration the expansion and contraction of crude as related to temperature. Thus the volume of all crude purchased having a temperature above or below 60 degrees Fahrenheit will be corrected to what it would be at 60 degrees.

This is not expected to effect materially either crude buyers or producers as a whole over a period of a year. Producers having crude above 60 degrees Fahrenheit would lose some by it as the quantity of their crude at 60 degrees would be less, but this loss is made up on crudes under 60 degrees. The average temperature of crude in this State the year around is taken as about 60 degrees and on this score it is said there will be very little difference in the amount received by producers generally or the amount paid by the purchasers.

On the other hand it is said the practice places crude on a defined basis of purchase fair to all concerned and provides a standard for checking the changes in volume of crude transported from one climate to another. The latter is of particular significance as it establishes a plane of equality for crudes in all areas by which crudes can be moved from a cold to a warm atmosphere, or vice versa, retaining a uniform market value.

The above dispatch was shown to a pipe line official in Tulsa. He characterized it as a complete innovation in the Mid-Continent area, saying: "Correcting for volume is done in Wyoming, but has never been done in Oklahoma except in the case of oil that has been artificially heated when, for example, the oil has had to be treated with heat so that it will run.

"Correction for gravity is generally practiced in fields where oil is purchased on a gravity basis, but correcting for volume is different from correcting for gravity. When we correct for gravity to true, or 60 degrees Fahrenheit, we designate the quality, which governs the price to be paid for the oil, but when we correct for volume to 60 degrees we designate the quantity, or barrels to be paid for."

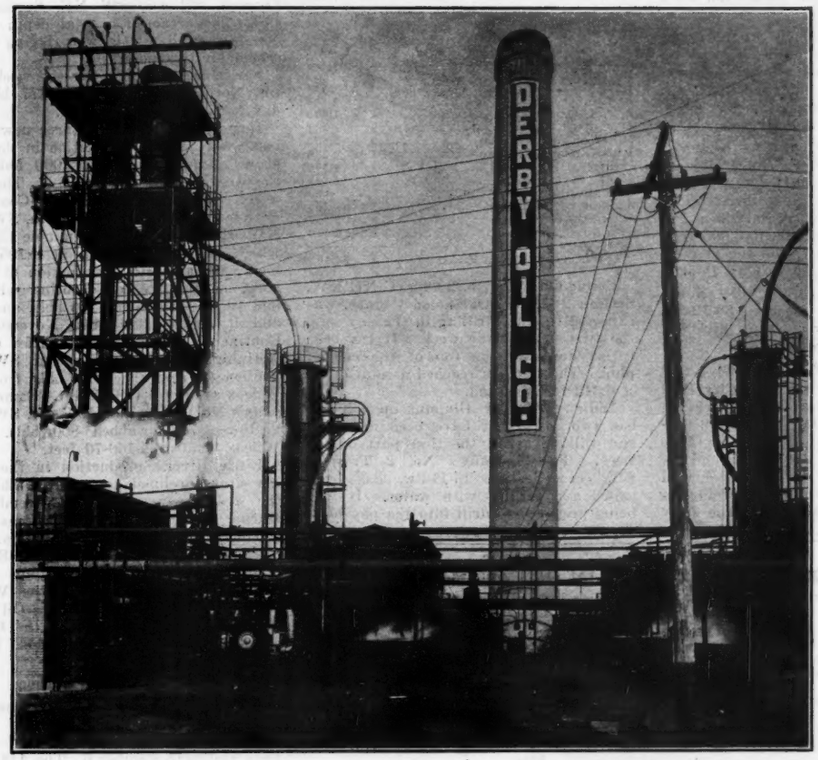
MAGNOLIA P. L. STATEMENT

The Magnolia Petroleum Co.'s pipe line department reports runs of Kansas and Oklahoma oil in October at 1,698,958 bbls., daily average 54,805 bbls.; shipments 2,331,413 bbls., daily average of 75,207 bbls.; stocks 8,718,142 bbls., or 705,721 bbls. less than the company reported in Oklahoma and Kansas at the close of September.

For their

DUBBS CRACKING PROCESS

After a year's experience with a TRANSIT HOT OIL PUMP, DERBY has installed a second TRANSIT HOT OIL PUMP on a DUBBS STILL. This second pump replaces one of another make. Nuff Ced.



The

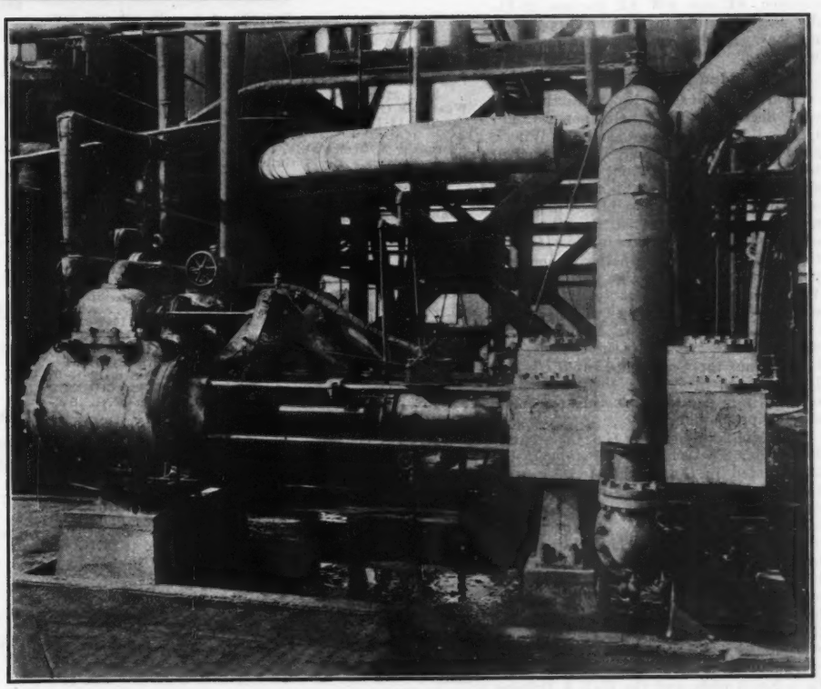
DERBY OIL COMPANY

prefer

TRANSIT

HOT OIL

PUMPS



NATIONAL TRANSIT
Pump & Machine Co.
OIL CITY, PA.

NEW YORK
CLEVELAND
HOUSTON
PHILADELPHIA
PITTSBURGH
TULSA
LOS ANGELES

Oklahoma's Crude Output Cut Deeply

Proration Brings Production Below Desired Figure but It May Increase This Week. Work Slows Down

By W. A. Spinney
Staff Correspondent, Oklahoma Fields

Oklahoma's production shows a large decline for the past week. The State's output dropped to a daily average of 617,000 bbls. It is the lowest daily average in the State since April, 1928. This drop is the direct result of operators curtailing production by prorating flush areas. The State's production is expected to show an increase this week.

The new well of the Indian Territory Illuminating Oil Co., which many predict will be the largest producing well in the State, is still shut in. It produced approximately 1,000 bbls. in the first 15 minutes. It is No. 1 Thomas Fuzzell Consolidated, SW cor. SE SE Section 13-11-3w. Owners will make a 24-hour production test later in the week if the output can be handled.

Owing to bad weather conditions a good many drilling tests in the field were shut down over the week end, the rotary mud having been thinned by heavy rains. Crews at several other wells were preparing to run cement.

With both the "A" and "B" producers in the Oklahoma City Pool producing wide open, production records were expected to be broken the first part of the week. One new producing well was added to the list Monday when the Sinclair Oil & Gas Co.'s No. 2 Stamper, SW cor. NW Section 30-11-2w, was opened after being shut in for the 30-day period. When it blew in the initial production was 40,000,000 feet of gas and approximately 400 bbls. of high grade oil.

Several tests are being deepened in the hope of finding other producing horizons. Indian Territory Illuminating Oil Co.'s No. 1 Henning, NE cor. SW SE Section 24-11-3w, the west offset to the discovery well, and Tom Slick Oil Co.'s No. 2 Glidden, SE cor. SW SE Section 13-11-3w, were starting to test the deeper formations. Neither produced oil over the week end.

Wildcat Looks Promising

Tom Slick Oil Co.'s No. 1 Martin, NW cor., Section 13-13-1w, Oklahoma County, a wildcat near Jones, had the Wilcox sand at 6,016 feet, where it core drilled to 6,036 feet in dry sand with nothing showing. The rain has thinned the rotary mud until it was impossible to drill and a new supply was mixed. Some predict, on account of the Simpson lime formations thinning more than the owners expected, together with the fact that the Wilcox sand was encountered approximately 900 feet higher than the Mid-Kansas Oil & Gas Co.'s No. 1 Trosper, in Section 19-12-1w, and also considerable higher than the Cromwell-Franklin's No. 1 Thompson, in Section 15-12-3w, north of the State capital, that this test may develop production.

The Mid-Kansas Oil & Gas Co.'s No. 1 Browning, SW cor. NW, Section 18-11-2w, located in the northeastern part of the south field, was still bailing and drilling the cement plugs at a total depth of 6,548 feet. This test is expected to blow in at any time. The casing was landed at 6,030 feet. Indian Territory Illuminating Oil Co.'s No. 2 Trosper and others, SW cor., Section 13-11-3w, had been bailed down to the cement plug and the hole loaded with water. Drilling operations were resumed Friday, November 8. This test is offset by the Coline Oil Co.'s No. 3 Olds, and the Hall & Briscoe No. 1 Childs, both large producers.

A test of the oil produced from the Tom Slick Oil Co.'s No. 1 Glidden, SW cor. SE, Section 13-11-3w, shows it to be producing about 4 per cent water. This test was shut in part of the time last week to install treating tanks. Same company's No. 2 Glidden, SE SW SE, Section 13-11-3w, a recent completion, will not be opened for production until November 16.

Shell Petroleum Corp.'s No. 2 Petty, SW cor. NE, Section 30-11-2w, was being plugged back from a total depth of 6,746 feet. It will be plugged back to the 6-inch casing and a production test made. Same company's No. 3 Petty was fishing a bailer at 6,325 feet.

Prairie Oil & Gas Co.'s No. 2 Hiddleston, SE cor., Section 19-11-2w, was drilling at 6,745 feet, on November 9. This test has been swabbed several times and oil fills up in the hole about 3,000 feet. It is believed this test is on the extreme east edge of the Oklahoma City Pool.

Magnolia Petroleum Co.'s No. 1 Noble, NW cor. SW SW, Section 30-12-2w, Oklahoma County, was coring at 6,632 feet, with nothing showing.

Oklahoma City Production

Production of the Oklahoma City Pool for the week ending November 6 averaged 64,468 bbls. a day. On November 6 production was 26,883 bbls. All the Class "A" producing wells were shut in and the Class "B" producing wells were opened and the production on the morning of November 7 was 44,895 bbls. The daily average gauges for the pool for the week ending November 6 were as follows:

Company, farm—	Wells	Bbls.
Coline, Olds	2	4,863
Cromwell et al, Trosper Park	1	2,473
Hall & Briscoe, Childs	1	5,296
I. T. I. O., Bodine-Anderson	1	off
I. T. I. O., A. Bodine	1	116
I. T. I. O., S. Bodine	1	1,586
I. T. I. O., Button	2	2,976
I. T. I. O., Fuzzell	1	14,737
I. T. I. O., Henning	1	25
I. T. I. O., Johnson	1	140
I. T. I. O., fee	1	1,630
I. T. I. O., Trosper	1	1,019
I. T. I. O., Watters	1	off
Mid-Kansas, Fortson	3	3,672
Mid-Kansas, Trosper	1	235
Prairie, Hiddleston	3	4,586
Shell, Petty	1	6,244
Sinclair, Kinter	1	80
Sinclair, Stamper	1	2,143
Slick, Glidden	2	8,637
Franklin, Lowery	1	4,010
Total	29	64,468

Coline Oil Co.'s No. 2 Olds, C NE NW, Section 24-11-3w, Oklahoma County, was expected to start drilling in the pay sand the first part of the week. It has been bailed down to the top of the cement plug. The test has reached a total depth of 6,342 feet, in sand.

Indian Territory Illuminating Oil Co. has two tests that have been cemented and will be bailed the first part of the week. The company's No. 2 Trosper, SW cor., Section 13-11-3w, has been bailed and refilled with water. It was being prepared to drill into the pay horizon. Same company's No. 1 Emerson-Joyce, NE cor., Section 25-11-3w, has started drilling the cement at a total depth of 6,635 feet, in lime.

Mid-Kansas Oil & Gas Co.'s No. 5 Fortson, SE cor. SW NE, Section 24-11-3w, has reached a total depth of 6,560 feet, in lime. It was rigging up to cement at this point.

Seminole production for the week ending November 6 declined 8,377 bbls. a day from the previous week.

East Little River had three new wells last week and the production in the pool shows a gain of about 2,000 bbls. for the week ending November 6. The new wells completed were the Mid-Continent Petroleum Corp.'s No. 11 Smith, SW cor. NW SE Section 5-7-7, Seminole County, which had Wilcox sand at 4,195-4,223 feet, with an initial production of 1,325 bbls., natural. After shooting with 20 and 40 quarts it made 100 bbls. an hour, and it made 2,380 bbls. November 8. Continental Oil Co. and Shaffer Oil & Refining Co.'s No. 5 Harrison, SW cor. Section 4-7-7, swabbed 600 bbls. from the Wilcox sand at 4,169-75 feet. Same company's No. 6 Harrison, NW cor. SW SW Section 4-7-7, swabbed 800 bbls. from Wilcox sand at 4,160-70 feet.

Little River's production in the shallow areas declined about 1,400 bbls. on the week's gauges ending November 6. During that time two new Wilcox sand producers were added to that area. Carter Oil Co.'s No. 3 Walker, SE cor. NE NW Section 24-7-6, Seminole County, made 1,835 bbls. from the Wilcox sand at 4,140-71 feet. Gypsy Oil Co.'s No. 1 Willie, east offset to the Carter Oil Co.'s well, made 700 bbls. in 24 hours.

Water in East Earlsboro

East Earlsboro Pool had five new producers last week, and a total of about 1,500 bbls. of new production for the week ending November 6. The 4,000-bbl. increase in the average daily production in this pool is mostly a recovery from last week's slump. The production is expected to show an increase next week. New potentials were taken and showed the pool to be making 45,906 bbls. The proration plans were changed to allow several tests now shut down to produce. One of the important events of the week in this pool is the showing of water in the Magnolia Petroleum Corp.'s No. 11 A. Anderson, SW cor. NE SW Section 18-9-6, and also in the same company's No. 4 D. W. Anderson, in the same section. Prairie Oil & Gas Co.'s No. 1 Wisener, SE cor. NE SW Section 18-9-6, is making about 175 bbls. of oil and 100 bbls. of water on the air lift.

Maud Pool showed a decline of about 800 bbls. daily. No new wells were completed in the Misener sand area. Only one test is nearing the sand and with the pool being prorated 20 per cent it is expected to show a decline for the next few weeks.

The daily average production of the St. Louis Pool for the week ending November 6 was 50,270 bbls., from 430 wells. It has been decreasing each week while the new production in the area is light. The decline amounted to about 1,700 bbls. daily in one week.

Asher Pool, which at one time looked threatening has declined to about 5,000 bbls. daily and has been holding at this level.

Sasakwa Pool has good possibilities of developing into a major sized pool. The production this week shows a small decline amounting to 325 bbls. daily, for the week ending November 6. No new completions were reported this week but

(Continued on Page 74)

WILDCAT OPERATIONS IN OKLAHOMA

(Descriptions are East and North unless marked otherwise)

NORTHERN OKLAHOMA

ALFALFA COUNTY

Company, farm and location— Remarks:

Smith Bros.' No. 1 Forbes, SE cor. NW NW Sec. 12-27-11w ..... Shut down 1,232 ft.
J. W. Bailey's No. 1 Acre, SW cor. NE Sec. 14-24-11w ... Drlg. 3,960 ft.

BECKHAM COUNTY

Kay and others' No. 1 Martin, C E half E half NW Sec. 32-8-24w ..... Drlg. 1,986-90 ft.; swabbed 100 bbls.
Producers Exploration Co.'s No. 1 Seidell, SE cor. SW SW Sec. 17-9-22w ..... Shut down 2,402 ft.
Carson and others' No. 1 Danby, SW cor. SE NE Sec. 20-8-22w ..... Shut down 1,547 ft.

BLAINE COUNTY

Lowen and others' No. 1 Unknown, NW cor. SW NW Sec. 27-16-11w ..... Spudded and shut down.
Washoma Oil Co. and others' No. 1 Phillips, C NW SW Sec. 12-19-10w ..... Shut down 2,880 ft.

CADDO COUNTY

Abernathy & Brown's No. 1 Horton, SE cor. Sec. 8-6-13w .. Shut down 535 ft.
W. J. Hartley's No. 1 Galbreath, SE cor. NW SE Sec. 29-5-12w ..... Shut down 3,394 ft.

CLEVELAND COUNTY

Harris et al's No. 1 Highbee, SE NW Sec. 20-6-1 ..... Rig.
Daniels & LeWright's No. 1 Vandever, C SW Sec. 15-7-1w ..... Shut down 3,130 ft.
Phillips Pet. and T. B. Slick's No. 1 Sudick, NE cor. NE Sec. 8-10-2w ..... Drlg. 7,425 ft.

COAL COUNTY

W. E. McGraw's No. 1 King, C SW NE Sec. 11-1-8e ..... Shut down 1,285 ft.
McGinley & Sigler's No. 1 Willsey, NW cor. SE SE Sec. 7-2-8 ..... Shut down 3,016 ft.
E. W. Whitney's No. 1 Brown, C SE NE Sec. 10-2-8 ..... Shut down 202 ft.

COMANCHE COUNTY

Green and others' No. 1 Wilson, C NE SW Sec. 14-1-12w .. Shut down 4,055 ft.

CREEK COUNTY

Carter Oil Co. et al's No. 1 Clinton, SW NW Sec. 12-15-9 .. Drlg. 920 ft.

GARFIELD COUNTY

Continental and Barnsdall's No. 1 Brown, CNL SW Sec. 10-20-4w ..... Location.
E. L. Love and others' No. 1 White, SE cor. NW Sec. 9-24-6w ..... Underreaming 5-in. csg. 5,566 ft.

GRADY COUNTY

J. V. Bailey's No. 1 Hubbard, C NE NW Sec. 1-10-6w .... Spudded and shut down.
J. M. Henry and others' No. 1 Abraham, SE cor. NW Sec. 4-5-8w ..... Rig.

GRANT COUNTY

Gypsy Oil Co.'s No. 1 Belderbeck, C SE SE Sec. 27-28-7w .. Drlg. 3,300 ft.
Bailey's No. 1 Stover, C SW SE Sec. 20-27-5w ..... Rig on ground.
Baucher et al's No. 1 Deadman, SW SE Sec. 12-28-4w .... Drlg. 3,750 ft.
Cowden and others' No. 2 Vollmer, CEL NE SW Sec. 22-25-4w ..... Shut down 5,640 ft.
Otstot's No. 1 Tabor, C NE NE SE Sec. 23-26-3w ..... Drlg. 540 ft.

GREER COUNTY

Helmerick & Payne's No. 1 Henck, NW cor. Sec. 23-6-24w. Drlg. 1,860 ft.
I. T. I. O. and others' No. 1 fee, C SW NE Sec. 17-6-24w ..... Straightreaming 1,902 ft.
S. M. Stauffer's No. 1 Castleman, SW NE Sec. 8-4-26w ... Shut down 625 ft.

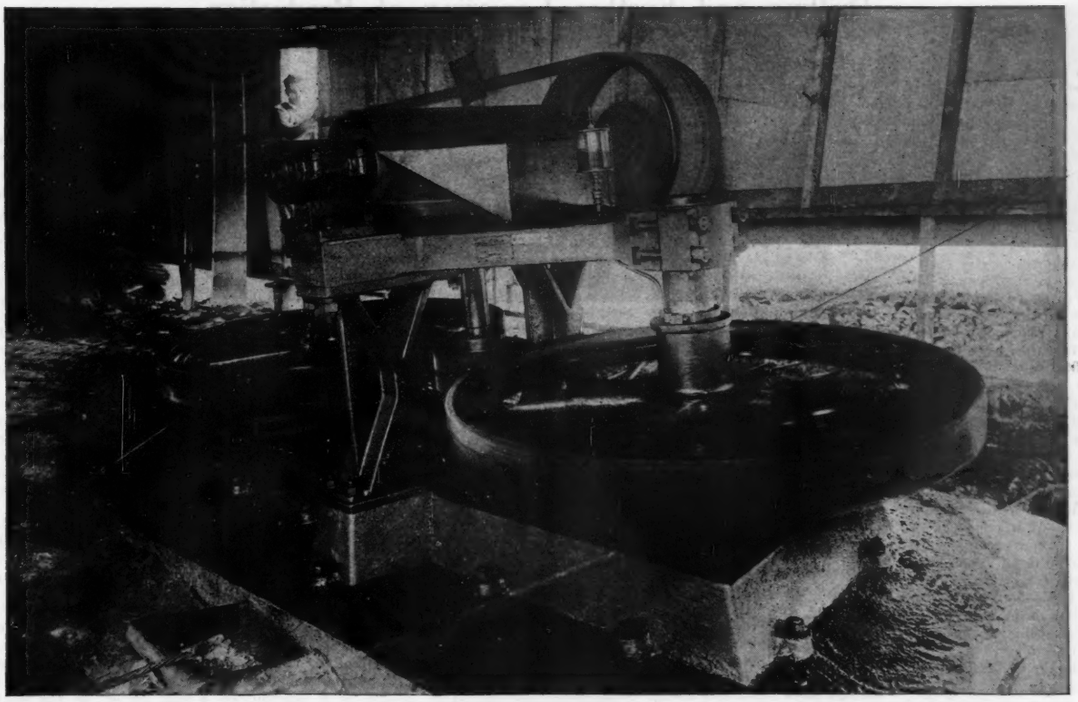
HARPER COUNTY

Sinclair Oil & Gas Co.'s No. 1 Howell, C SW SW Sec. 14-26-24w ..... Drlg. 5,366 ft.

HASKELL COUNTY

Holden's No. 1 Phillip, SE cor. Sec. 3-9-18e ..... Shut down 1,200 ft.
Marion Oil's No. 1 Sanders, NW NE SW Sec. 10-9-18e .. Shut down 2,387 ft.
Sanboise Gas' No. 1 Unknown, SW NW SE Sec. 32-9-21e .. Shut down 2,100 ft.

(Continued on Page 161)



A 24-Hour-Service Pumping Power

So much depends upon the continuous service of pumping powers that they must be reliable—on a 24 hour basis. And, in the last analysis, much of the responsibility for their proper performance rests on the bearings with which they are equipped.

The Petroleum Engineering Corporation of Bradford, Pa., has settled the whole bearing problem in its No. 4 powers once and for all—by fitting them with Timken Bearings throughout. Thus not only is their reliability secured beyond doubt, but their operation is rendered more economical in terms of both power and maintenance costs.

TIMKEN BEARING EQUIPPED

Even more important, the exclusive Timken combination of Timken tapered construction, Timken *POSITIVELY ALIGNED ROLLS* and Timken steel makes these advantages permanent features in the performance records of the powers. And completes another demonstration of Timken fitness to meet and overcome the hardships of oil field service.

THE TIMKEN ROLLER BEARING COMPANY, CANTON, OHIO

TIMKEN *Tapered Roller* **BEARINGS**

Kansas Operators Cut Down New Work

Proration of Runs in Flush Fields Results in Less Drilling and Further Lowering of Production

By W. A. Spinney
Staff Correspondent, Kansas Fields

Proration of oil production in the flush areas of Kansas has curtailed the new development. Only nine new operations were reported in Kansas this week, the smallest number of new operations reported in any week this year. Operators have all agreed not to start new tests in the Voshell and Ritz Pools for 30 days. Winter development is expected to be quiet, but with the coming of spring a renewal of activities is expected on what may be a greater scale than ever. The drilling campaign is expected to be pushed in the western part of the State, which has developed so many promising wildcat tests. Production for the week ending Saturday was 110,000 bbls. per day.

Sedgwick County had three new operations, Greenwood County has two. The others were divided as follows: Butler, Cowley, McPherson and Rice had one each.

The proration agreement in the Voshell area expired November 9. Major oil companies regard this area as one of large potential proportions. At a recent meeting it was decided to continue the proration agreement for 30 days. The Derby Oil Co. has the only large producer in the area, its No. 1 Voshell, a Wilcox sand well, which has been pinched to 50 bbls. daily. In the event no new tests are started before December 9 by other oil companies the Derby Oil Co.'s well will remain curtailed. In the other prorated areas the operators are producing the wells 50 per cent of their potential.

The Ritz area was prorated 50 per cent on November 6 and will be held at this figure until January 1, 1930. Its potential will be the gauges of the previous 10 days before proration. This agreement was made at a meeting of operators held in Wichita. The decision to curtail production of the Ritz area followed the suggestion made by the operators of the Valley Center Pool, which has been under proration for the last 30 days. The Ritz Pool potential is estimated at 3,000 bbls. Fifty per cent of this would be 1,500 bbls. Operators also agreed that no new tests would be started for 30 days. T. C. Johnson has been appointed umpire of the pool. There are five producing wells. The gauge of the pool on November 5 was as follows:

Company and farm—	Wells	Bbls.
Dixie:		
Flook	1	400
Texas:		
Munn	1	1,120
Shell:		
Ritz	3	1,490
Total	5	3,010

Ness County's Encouraging Well

The Ness County wildcat test of the Continental Oil Co. was swabbing 220 bbls. on the gauge of November 8. It indicates the western part of Kansas may develop into a big producing area. The test, Continental Oil Co.'s No. 1 Moses, NE cor. SE, Section 7-18-25w, found the pay in an unidentified horizon at 4,428-31 feet. The swabbing lowered the fluid in the 5-inch hole to 700 feet off bottom. Oil was standing 4,000 feet in the hole before swabbing. It was estimated that the hole filled at the rate of 10 bbls. an hour. The oil tests 36 gravity (corrected).

The importance of this discovery must not be overlooked. Operators must look to the western half of the State for their future supply of Kansas crude oil. The Continental Oil Co.'s new well is approximately 75 miles west of the Russell County Pool, which is the nearest production of any consequence.

Several other wildcat tests have been drilled in different counties in the western side of the State where a showing of oil has been encountered but none worth saving. Some estimate the Ness County wildcat to make a 100 to 150-bbl. pumper unless deeper drilling increases its output. The Continental Oil Co.'s test was located before the area had been core drilled. Later it was core drilled and the information obtained from this research work indicated that the location was approximately correct.

Showing in Saline

Another wildcat test that found a showing of oil in the Wilcox sand, but later drilled into water was the Dixie Oil Co.'s No. 1 Olsen, NW cor. NE, Section 10-16-3w, Saline County. This test is located about 35 miles north of the new Wilcox sand producer in the Voshell Pool, owned by the Derby Oil Co. The finding of this sand makes the area between these tests attractive for future development. Derby Oil Co.'s well was producing at the rate of 1,000 bbls. daily before being pinched in to 50 bbls. daily. Dixie Oil Co. has decided to plug back to the Viola lime and test out the showing at 3,306-14 feet before abandoning this test. Same company is starting another wildcat on its block in Township 17-3w, McPherson County, south of the above test.

In Sedgwick County

In the new extension to the Greenwich Pool in Sedgwick County, where the Shell Petroleum Corp.'s No. 1 Erdwein, in SW cor., Section 11-26-2, is swabbing 800 bbls. daily, two new locations were made last week. Same company's No. 1 Morris, in SE cor., Section 10-26-2, is a direct offset to the producing well. Gypsy Oil Co. has started a new test in the NW cor., Section 15-26-2, Sedgwick County.

A new location has been staked on the west edge of Wichita. The test is owned by C. B. Davis and is No. 1 Van Arsdale, approximately SE cor. NW SE, Section 14-27-1w, Sedgwick County. The test is located on about 100 acres of leases which were blocked up in small tracts. The new location is 1½ miles south and a half mile east of the Plains Oil Co.'s new producer.

Bu-Vi-Bar Petroleum Corp. and others' No. 6 Reed, in Section 1-26-1w, Sedgwick County, made 975 bbls. in 18 hours from the pay horizon at 3,356-59 feet. It is the sixty-second well these companies, Bu-Vi-Bar, Gypsy and Continental, have drilled in the Valley Center Pool. It also equals the production of any other well previously completed on the lease. Same companies' No. 5 Reed has reached a total depth of 3,355 feet and is expected to be drilled into the pay horizon in a few days.

Tom Slick Oil Co. and others' No. 1 Miller, SE cor., Section 13-24-8w, Harvey County, is the deepest active test in the State. It was drilling at 5,400 feet on the report of November 8, with nothing showing. Same company's No. 1 Thompson, NW cor., Section 19-32-6w, Harvey County, was drilling at 4,985 feet, after finding water at 4,975 feet.

Cowley County

In the new helium gas field near Dexter in Cowley County, Trees Oil Co.'s No. 1 Brubaker, SE cor. NW, Section 12-34-6, had a hole full of water at 1,158 feet. It will be abandoned at that depth. The failure is a quarter of a mile west of the discovery well that opened the new helium gas field.

Winfield Drilling Co.'s No. 1 Graham, in the State Pool north of Winfield, found water in the Siliceous lime at 3,484 feet. It was still drilling at this depth.

Another interesting test in the southern Kansas is the Continental Oil Co.'s No. 1 Padgett, in Section 23-34-2, Sumner County. On the last report it was shut down for tankage with 1,500 feet of oil in the hole. The oil was found in chat at 3,480-90 feet.

Gas in Barber County

The second showing of gas has been found in Robertson and others' No. 1 Powell, SE cor., Section 11-32-10w, Barber County. It encountered the second gas horizon at approximately 3,300 feet, the gas estimated to gauge 8,000,000 feet. The test is attracting considerable attention as it is surrounded by several large blocks which were core drilled and favorable structural conditions found.

Some operators predict Anderson, Chase, Chautauqua, Elk and Woodson Counties are due for another drilling campaign next winter and spring. Several new operations are under way in these counties at the present time in scattered areas and more may be added as spring draws near. Oil in these areas is found in the shallow sands and also in the Mississippi lime at 2,000 feet. Several magnetometers were in operation last summer in these counties. The work developed interesting data on structural highs and trends on which oil is found in this State. The trends are in a northeast and southwest direction in these counties. Oil has been found at 850-900 feet in Woodson County, and slightly deeper in the south and west directions.

Shell Petroleum Corp.'s No. 1 Ritz, in Section 2-20-2w, McPherson County, the discovery well in that area came in flowing 100 bbls. an hour, and was pinched to 1,100 bbls. daily, then went dead. It had been swabbing 175 bbls. daily. It suddenly came to life and made 700 bbls. on the gauge of November 5, and the next day was pinched to 225 bbls.

Barber County

Rowland and others' No. 1 Pickens, NE cor. NW NE, Section 27-30-14w, is dry and abandoned at 4,736 feet.

Barton County

The Prairie Oil & Gas Co. made location for No. 1 Davidson, NW cor. SE, Section 4-16-11w.

Butler County

Darby Petroleum Corp. is erecting the rig for No. 1 Abbott, SE cor. NW NE, Section 4-28-3.

Cowley County

Mid-Kansas Oil & Gas Co. moved the rig in for No. 2 Harris, C NE NE, Section 20-31-6.

Coffey County

The Prairie Oil & Gas Co. staked location for No. 1 Scott, SW cor. NE, Section 13-23-14.

Dickinson County

The Prairie Oil & Gas Co. made location for No. 1 Rumold, NW cor. SW NE, Section 12-16-2.

Greenwood County

Walton Oil Co. made location for No. 1 Massmann, SW cor. SE, Section 3-24-12. The Prairie Oil & Gas Co. staked location for No. 1 Gilbert, SE cor. NW, Section 4-24-12. The rig is being built for No. 1 Smith, SW cor. NW, Section 5-24-11. Mid-Continent Petroleum Corp.'s No. 15 Sullivan, NW cor. NE NW, Section 14-24-12, is rigging up. Eureka Oil Co.'s No. 1 Edwards, NW cor. SW, Section 35-23-11, is dry and abandoned at 2,025 feet. West Coast Leasing Co.'s No. 1 Souders, SE cor. NE SW, Section 31-25-13, has been abandoned at 1,630 feet.

Lyon County

Sheedy and others' No. 1 Welsh, NE cor. SE, Section 30-20-10, made 18 bbls.

(Continued on Page 130)

WILDCAT OPERATIONS IN KANSAS

(Descriptions are East unless otherwise marked)

BARBER COUNTY

Company, farm and location— Remarks:
Allison & Fitzwilliams' No. 1 Kimberg, NW SE Sec. 2-30-12w ..... Location.
Rolland & Skelly Oil Co.'s No. 1 Pickens, C NE NW NE Sec. 27-30-14w ..... Plug back to 4,727-30 ft. to test; total depth 4,735 ft.
Skelly Oil Co.'s No. 1 Temple Ranch, Sec. 13-34-15w .... Drlg. 4,410 ft.
Robertson et al's No. 1 Powell, SE cor. SE Sec. 11-32-10w ..... Shut down 3,260 ft.

BARTON COUNTY

Prairie's No. 1 Davidson, NW SE Sec. 4-16-11w ..... Location.
Allison & Fitzwilliams' No. 1 Brodle, NE cor. Sec. 19-16-12w ..... Drlg. 1,950 ft.
Slick et al's No. 1 Sweeney, SW NE Sec. 23-17-11w .... Drlg. 500 ft.
Everett & Wiley's No. 1 Ward, NW cor. SW Sec. 12-20-13w ..... Shut down 3,948 ft.

BUTLER COUNTY

Lario O. & G. Co.'s No. 1 Hill, SW SE Sec. 1-27-4 ..... Rig on ground.
Lario O. & G. Co.'s No. 1 Miller, NE SE NE Sec. 36-26-3.. Spudding.
Martin et al's No. 1 Flanigan, C SW SE SW Sec. 29-27-3.. Shut down 50 ft.
Milmac Oil Co.'s No. 1 Clearwater, SW cor. Sec. 33-25-3 .. Drlg. 3,200-55 ft.; water, abandoned.
Sinclair Oil & Gas' No. 1 Johnson, NE cor. Sec. 16-26-3.. Drlg. 2,985 ft.
Stroub & Dutton's No. 1 Kibby, SE SW SW Sec. 12-28-3.. Drlg. 350 ft.
White Eagle's No. 1 Bachelder, SW cor. Sec. 17-25-3e ... Hole full water 3,220-94 ft.; abandoned.
Valley Osage's No. 1 Sirs, SE cor. Sec. 34-23-3 ..... Drlg. 2,530 ft.

CLAY COUNTY

Chrisler et al's No. 1 Tivier, SW cor. Sec. 19-8-3 ..... Rig.
Derby Oil Co.'s No. 1 Meimueller, C NW SW Sec. 9-10-3e.. Drlg. 2,400 ft.
Skow Bros.' No. 1 Strud, SW SE Sec. 16-9-4 ..... Shut down 2,510 ft.

COWLEY COUNTY

Prairie's No. 1 Leighty No. 1 Ball, SW SE Sec. 4-30-5 ..... Rig.
A. M. Landon's No. 1 Wheeler, C SW NW SE Sec. 24-30-4 ..... Drlg. 1,125 ft.
Milton & Mead's No. 1 Tatum, SE cor. SW Sec. 11-31-6 .. Shut down 1,325 ft.
Roth & Farrout's No. 1 Thompson, NE SE Sec. 31-31-8 .. Drlg. 500 ft.
Shawver et al's No. 1 Oldham, NW SE Sec 23-32-3 .... Drlg. 2,375 ft.

DICKINSON COUNTY

Hiatt & Durham's No. 1 Wendt, NW cor. Sec. 17-16-2 .. Spudding.
Kruger et al's No. 1 Diche, C NW NE NE Sec. 17 13-4 ..... Drlg. 1,500 ft.

DOUGLAS COUNTY

Jenkins & Scott's No. 1 Haden, SE NW Sec. 10-12-17 .... Drlg. 550 ft.

EDWARDS COUNTY

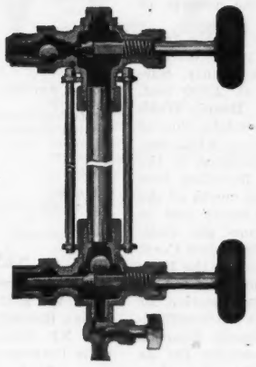
Skelly's No. 1 Johnson, NE SW Sec. 21-26-17w ..... Rig.
Barnsdall Oil's No. 1 McCarty, NW NE Sec. 31-25-17w.. Rig on ground.
Dixie & Amerada's No. 1 McCarty, SW cor. Sec. 22-25-17w ..... Rig.

PAWNEE COUNTY

Prairie O. & G. Co.'s No. 1 Black, SW NE NE Sec. 11-20-18w ..... Rig.
F. C. Troupe's No. 1 Lovett, CEL NE NE Sec. 31-21-16w.. Shut down 1,560 ft.

(Continued on Page 162)

The LEADERSHIP of PENBERTHY PRODUCTS



Safeguard Automatic Liquid Level Gauge

Navy Type Liquid Level Gauge

Gas Engine Lubricator

Snap Lever Oiler

THE leadership of Penberthy Products is the inevitable result of years of conscientious effort to put better materials and a greater measure of skill in their manufacture.

Penberthy Products are known throughout the oil fields for their higher efficiency, greater dependability and longer life.

When you specify Penberthy Products you not only get the best but you save money in the long run. You can get Penberthy Products at your local supply house.

Screw Plunger Grease Cup

Spring Compression Grease Cup

Plain Compression Grease Cup

Plain Brass Oil Cup

PENBERTHY INJECTOR COMPANY

ESTABLISHED IN 1886 — DETROIT — CANADIAN PLANT WINDSOR, ONT.

Magnolia Well May Close Darst Gap

No. 1 Rand Miller Tops Chalk at 2,197 Feet, 46 Feet Higher Than in Discovery Well, and Is Likely to Prove Up Structure

By B. D. Stevenson
Staff Correspondent, Southwest Texas Fields

SAN ANTONIO, Tex., Nov. 11.—Chalk was topped at 2,197 feet in the Magnolia Petroleum Co.'s No. 1 Rand Miller, 150 feet from the NW and SW lines of the Jerome B. Alexander Survey in the Darst Creek Field, which, allowing for elevations, is 46 feet higher than in The Texas Company's No. 1 Dallas Wilson, the discovery well of the field. The Magnolia Petroleum Co.'s No. 1 Rand Miller is 2½ miles northeast of The Texas Company's No. 1 Dallas Wilson and about the same distance southwest of the Magnolia Petroleum Co.'s No. 1 R. C. Appling on the northeast, which is also a producer. The three wells are almost on a line with each other. It looks as though the No. 1 Rand Miller would help close up the 5-mile gap and prove up the Darst Creek structure.

The R. R. Penn-Simms Oil Co. No. 1 Manford is another 2½ miles on northeast of the Magnolia Petroleum Co.'s No. 1 R. C. Appling. The Penn-Simms and Magnolia Appling are shut in. The Texas Company's No. 1 Dallas Wilson and its offset, the Lemmie Anderson, are producing about 1,400 bbls. of oil a day and the oil is run through the 10-mile pipe line to Sullivan switch and shipped by rail.

Most of the active interest in Southwest Texas is centered at this time in the Darst Creek area and mainly in the wells that are close in to the supposed line of production. Since last week some new propositions have entered that field. Trinity Drillers and Clements have spudded in on a 25.5-acre tract out of the Rand Miller farm a mile northeast of the Magnolia Petroleum Co.'s No. 1 Rand Miller and United North & South Development Co. has spudded in and is drilling the No. 1 Thomas Dix, 600 feet northwest of the Magnolia Petroleum Co.'s No. 1 Rand Miller. Mundine Investment Co., Inc., is down below 1,600 feet in its No. 1 L. V. Echols in the James Hodges Survey, less than a mile south of the Magnolia Petroleum Co.'s No. 1 R. C. Appling and Magnolia has the derrick up on its No. 2 L. V. Echols, offsetting the Mundine test.

Another Rigging Up

Another test rigging up in the same territory is O. W. Killam's No. 1 C. N. Adams in the Josias Randolph Survey, 150 feet to the NE and NW lines of the tract and 1 mile nearly due north from the Magnolia Petroleum Co.'s No. 1 R. C. Appling.

The Magnolia Petroleum Co.'s No. 1 Rand Miller, hitting the chalk high, has created as much local excitement as though it were already in and a big gusher. The test was cored from 2,205-2,207 feet and the Austin chalk showed oil. Casing has been set at about 2,200 feet and the test was expected to resume drilling early this week and go to the Edwards lime. The expectation is that it will be brought in and given a full opportunity to show what it can do and a great many are expecting a big well.

It recently has developed that small leases in the Darst Creek Field are held by independent operators who will wish to drill at once and develop their leases and it is difficult to see how it will be possible to hold down the development of this area from this time on. This condition and the recent development wherein the Magnolia Petroleum Co. has drilled one producer, the No. 1 R. C. Appling, and has another, the No. 1 Rand Miller with high chalk and looking like a producer, in the middle of the field, is about to start things going. The industry is not lacking in those who are ready to predict that the Darst Field will be much bigger than the Joe Bruner or the old Luling Field in extent and production.

Laredo Territory

Four producers were completed in the Laredo territory in proven fields last week, none of which was of unusual importance either as to size or location, but the Magnolia Petroleum Co.'s No. 1 Lundell on the west side of the Schoolfield-O'Byrne Pool, which was reported recently as a 15,000,000-foot gas well, has started making oil. A separator was put in and it made at the rate of 300 bbls. of oil a day for the first day but dropped to 200 bbls. for the second day. Since then it has come back up a little and last reports it gauged 226 bbls. in 24 hours. This test got the sand a little higher than in other tests in the field and this seems to account for its making gas at first. The flow of oil is above the average of the field. Trapshooter Reilly completed his No. 2 Hahl in the south end of the field flowing and pumping 100 bbls. of oil a day at total depth of 2,330 feet with sand from 2,326 feet. He is rigging up for the No. 2 Hahl.

G. M. Partee last week sold to Simpson Fell Oil Co. 100 acres on the east side of the field with five oil wells at $300 a barrel of daily production, the total consideration being about $70,000. The leases and property sold are the west 80 acres of the NW Survey 60 and the west half SE NW same survey, being a 20-acre tract.

Others in Laredo District

Other than the completion in the Schoolfield-O'Byrne Pool and the Magnolia Petroleum Co.'s No. 1 Lundell in that pool changing from gas to oil, the completions of producers for the Laredo district include the Houston Oil Co.'s No. 20-D Benavides, a 75-bbl. well in sand at 2,347-51 feet in Block 5, Survey 753 of the Magnolia-Cole Field in Webb County. It is a slight extension north of the oil producing area of that field.

The two other completions of producers were in the northeast end of the Kohler gas field in Duval County. The Humble Oil & Refining Co.'s No. 35 Kohler in the SE cor. Survey 165 is a 25,000,000-foot gas well at 1,790 feet and the E. H. Buckner (Sun Oil Co.) No. 1-C Peters in the SW cor. Survey 162 is a 25,000,000-foot gas well at 1,795. Both wells are a little bigger than the average of the field.

Abandoned tests in the Laredo territory include the following: L. W. Nelson's No. 2 Moglia, Webb County, Survey 672, abandoned dry at 2,800 feet. O. W. Killam's No. 13 Bruni, Webb County, Survey 3, Adams subdivision of Bruni lands, abandoned dry at 3,152 feet.

New locations were announced in the Laredo district last week including four in the territory immediately north of the Cole gas field in Duval County and in the area termed the Simms gas field. Allied Gas Co. and Shell Petroleum Corp. announced two new locations on the Dinn land and Simms Oil Co. location for its No. 7 Dinn and J. G. Mackey location for his No. 2 Dinn. In the Schoolfield-O'Byrne Pool in Duval County, Simpson Fell Oil Co. announced location for its No. 7 Moody. In the Cuellar oil producing area east of the Jennings gas field in Zapata County Killam-Duggan announced location for their No. 11 Cuellar. Humble Oil & Refining Co. announced location for its No. 1 Peters in Survey 398 in the Kohler gas field in Duval County.

ABANDONED TESTS

Sullivan Pool—Gonzales County

Empire Gas & Fuel Co., George Sullivan's No. 1 Norwood, Winslow Turner Survey No. 3, 2,080 feet to NE line, 2,410 feet to NW line, abandoned at 4,269 feet in Edwards lime; made sulphur water.

Rockdale Pool—Milam County

Texas Petroleum Development Co.'s No. 1 Milton Phillips 80-A J. J. Chambers Survey. In center of Rockdale Pool 600 feet north of No. 14, abandoned, dry, 3,711 feet.

Production

The daily average production of the pools in Southwest Texas for the past week follows:

Branyon	24
Bruner	34,466
Dale	525
Darst Creek	1,839
Kingsville	225
Larremore	147
Luling	10,456
Lytton Springs	905
Maverick	.....
McMullen County	47
Medina County	24
Mirando	10,456
Somerset	1,771
Yoast	1,290
Total	62,175
Week ending November 1	62,793
Decrease	618

NEW LOCATIONS

Darst Creek—Guadalupe County

O. W. Killam's No. 1 C. N. Adams, Josias Randolph Survey, 150 feet to NW and NE lines of farm, location. Magnolia Petroleum Co.'s No. 2 L. V. Echols, James Hodges Survey, 150 feet to SW lines of lease, derrick up. Trinity Drillers-Clements' No. 1 Rand Miller, Jerome B. Alexander Survey, 150 feet to NW and NE lines of 25.5-acre tract, derrick, moving in machinery. United North & South Development Co.'s No. 1 Thomas Dix, Joel R. Robinson Survey, 150 feet to SE and SW lines of lease, location.

Adams Gas Field—Medina County

Jake Jarman's No. 1 J. P. Nixon, A.B. &M. Survey No. 63, 1,400 feet to north line, 1,300 feet to East line, in southwest end of Adams gas field, location.

Lasater Pool—Brooks County

Houston Oil Co.'s No. 1 Holbein-Wormser, Palo Blanco de Maguellas Survey, 330 feet north line, 6,540 feet east line, direct offset 660 feet south of No. 1 Lasater, rigging up.

Buchanan Pool—Caldwell County

Neuman & Speer, Inc.'s No. 1 McConnell, William Spillers Survey, 900 feet southwest of The Texas Company's No. 1 Cude, drilling at 1,945 feet in pay formation; set casing at 1,907 feet.

Joe Bruner Field—Caldwell County

Humble Oil & Refining Co.'s No. 5-A M. Briscoe, J. Hinds Survey, 206 feet to north line, 485 feet to west line, drilling in lime at 2,477 feet; Humble Oil & Refining Co.'s No. 9 C. F. Dye, Hinds Survey, 300 feet east of No. 1 Dye, drilling in shale at 500 feet; Humble Oil & Refining Co.'s No. 9-C Floy Gray, J. Hinds Survey, 150 feet to north line, 350 feet to east line, drilling in shale at 500 feet. Humble and Luling's No. 7-A Johnson, J. Hinds Survey, 593 feet to south line, 650 feet to west line, drilling in shale at 400 feet.

Darst Field—Guadalupe County

Gulf Production Co.'s No. 1 C. Anderson, J. C. Darst Survey, 150 feet to south and east lines, location; Gulf Production Co.'s No. 1 Tadlock, Jacob C. Darst Survey, 150 feet northwest corner, location. Magnolia Petroleum Co.'s No. 1 L. V. Echols, James Hodges Survey, 150 feet to northwest and southwest lines of farm, 3,650 feet to southwest and 322 feet to northwest of survey, location; Magnolia Petroleum Co.'s No. 1 Rand Miller, Jerome B. Alexander Survey, 150

(Continued on Page 129)

WILDCAT OPERATIONS IN SOUTHWEST TEXAS

Week Ended November 9

BASTROP COUNTY

T. C. Hadley's No. 1 F. Kiel, R. H. Grimes Sur., 150 ft. E line, 1,000 ft. S line ..... Drlg. 3,727 ft.; in shale waiting for drill stem.

R. L. Batts et al's No. 1 A. L. Alexander, W. M. Eastland Sur., 1,350 ft. from W line, 750 ft. from S line ..... Location.

Owens et al's No. 1 Goodman ..... Top Buda; shut down 2,540 ft.

Superior Oil Co.'s No. A-1 G. T. King, G. T. Glasscock Sur., 20 ft. to S and W lines of lease ..... Core test; will not be further reported.

Superior Oil Co.'s No. A-2 W. D. Ramsey, G. T. Glasscock Sur., 1,800 ft. to SE line, 1,200 ft. to SW line .. Core test.

BEE COUNTY

Houston Oil Co.'s No. 1 McKinney, L. C. Randolph Sur. ..... T. D. 2,320 ft.; sandy shale at 2,312-20 ft.; testing sand.

The Texas Company's No. 1 Tipps, C. Clark Sur., 150 ft. from S and W lines of Blk. 45 ..... Location.

Mission Drilling Co.'s No. 4 Ray in Geor. S. Kerr Survey .. Drlg. 4,165 ft. in shale.

Nichols et al's No. 2 Hicks in Jose Maria Uranga Survey, 600 feet to N. line, 2,000 feet to W. line ..... T. D. 2,000 ft.; hard sand at 1,897-1,900 ft.; small show of gas.

BEXAR COUNTY

Guy S. Fisher's No. 1 S. L. Beck, P. W. Hays Sur. ..... T. D. 1,000 ft.; shut down in shale.

F. H. Eckert's No. 1 Sandemer, Sur. 52 ..... Drlg. 540 ft.

Penn-Tex Oil Co.'s No. 1 Kate May, F. R Desauge Sur. No. 134 ..... T. D. 1,490 ft.; coring show oil and some gas on depth at contact of Taylor marl and Austin; may set csg.

Rose E. Denton Co.'s No. 1 Clarence B. Uhl, 150 ft. to S and W lines, 6 miles SE from San Antonio ..... Location.

Moore-Jauer's No. 1 Holly R. Ellison ..... T. D. 1,745 ft.; set csg. using clay; bailing.

Leon Oil Co.'s No. 1 Reiniger, 300 ft. E line, 215 ft. S line ..... Drlg. 1,665 ft. in shale.

E. G. Potter's No. 1 Watson, B. Martinez Sur. ..... T. D. 2,509 ft.; bailing.

W. C. Sutherland's No. 1 J. Halberdier, Survey 57, located 150 E of Cen of W. line ..... Location.

BLANCO COUNTY

Ashe & Marshall's No. 1, 5 mi. S Johnson City ..... Rigging up.

BROOKS COUNTY

Milam Drlg. Corp.'s No. 8 Riley Allen, C Blk. 37, Nesslip Subdivision of Allen Ranch, NE part ..... Location.

CALDWELL COUNTY

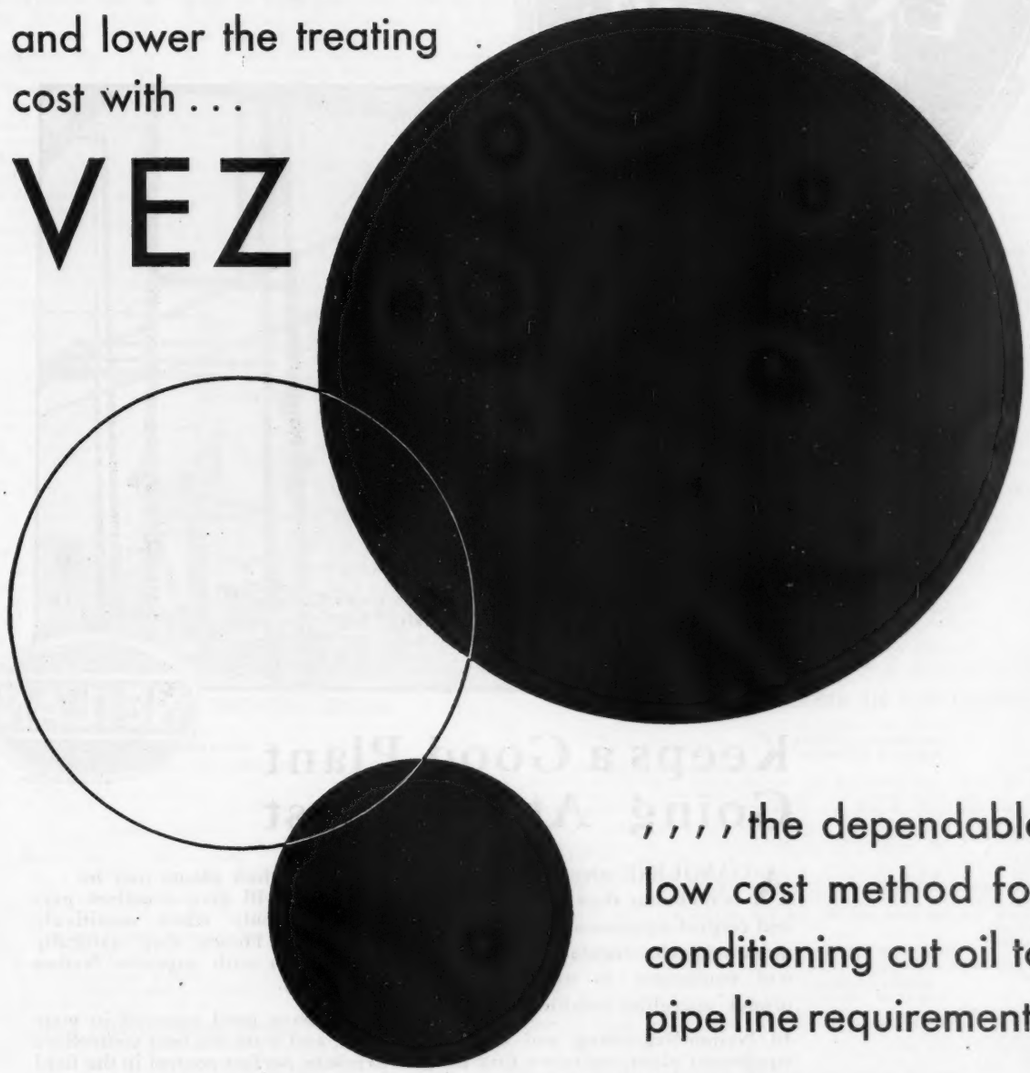
Joe Bruner's No. 1 Neil, S. Morris Sur., 400 ft. NE and NW lines ..... Location.

Stone et al's No. 1 Robert Guinn, Joseph Burleson Sur., 150 ft. to NE and NW lines of 225-acre farm ..... T. D. 1,711 ft.; shut down.

Cranfill & Reynolds' No. 1 Berensdorf, A. Floyd Sur ..... Location.

Hold the gravity and lower the treating cost with . . .

VEZ



. . . . the dependable low cost method for conditioning cut oil to pipe line requirements

The Vez Company
Manufacturing Chemists
2221-3 Laws Street
Dallas, Texas

"*Ask the Man Who Uses It*"

Bristow, Oklahoma
Wewoka, Oklahoma
Wichita, Kansas
Tullos, Louisiana
Wichita Falls, Texas
Borger, Texas
Luling, Texas
Big Spring, Texas
Wink, Texas
Pampa, Texas
Benavides, Texas
El Dorado, Arkansas
Seal Beach, California

Keeps a Good Plant Going At Its Best.

A GASOLINE plant or refinery is no better than its regulating and control equipment . . . each requires superior regulating and control equipment to maintain the proper operating conditions.

In Neilan regulating and control equipment plant engineers find the answer to their demands for superior pressure and liquid level control. These engineers realize that no matter how well designed and fabricated their plants may be . . . still they will give excellent performance only when sensitively controlled. Hence they naturally equip them with superior Neilan equipment.

If you have good material in your plant, and want the best controllers to insure perfect control in the field . . . get in touch with your Neilan, Schumacher sales engineer. Or write for the new illustrated catalog.

NEILAN, SCHUMACHER & CO.
641-651 Santa Fe Ave., Los Angeles, California

Branch Offices

New York, 30 Church Street
Wm. S. Waldrip, Mgr.

Chicago, 55 E. Wacker Drive
John M. Coffeen, Mgr.

Dallas, Sanger Hotel; Roy O. Campbell, Mgr.

Representatives
Stocks Carried

Tulsa, 221 East Archer Street
Camp-Morgan Co.

Houston, 1400 Conti Street
Maintenance Engineering Corp.

"NOTHING SUCCEEDS LIKE QUALITY"

Plan to Deepen Caddo Parish Well

Norton Test Encounters Salt Water. Disappointing Operations in Richland Parish. Pleasant Hill Has 487-Bbl. Well

By D. H. Bancroft
Staff Correspondent, Louisiana-Arkansas

SHREVEPORT, La., Nov. 11.—Dick Norton's well in the far NW cor. of Caddo Parish, which last week had 16 feet of saturated sand at a total depth of 3,701 feet, finally encountered salt water and is now arranging to deepen. The present total depth is 3,727 feet. S. T. Onyett's No. 1 Dixon at 2,444 feet is still waiting on standard rig. This well, it was reported, at 2,405 feet had 700 feet of oil standing in the hole. Magnolia Petroleum Co.'s No. 1 McCook and Hibbler in Webster Parish, which has been and is being watched with much interest in this district, is washing out the hole at 4,400 feet with a total depth of 6,958 feet.

In the Dixie extension of the Caddo Field, Standard Oil Co.'s No. 2 School Board after reaching depth of 2,682 feet tested dry and was abandoned as was the D. C. R.'s No. 2 Oden which also tested dry at 2,802 feet. Eylers Oil & Gas Co.'s No. 1 Sentell in the Dixie extension is arranging to test at 2,447 feet and this well is being watched closely.

Ray-Dawes Drilling Co.'s No. 4-A Hunter was completed as a 75-bbl. pumper at 2,478 feet. Standard Oil Co.'s No. 3 Henderson, located close to the Ray-Dawes No. 4-A Hunter, tested dry and was abandoned at 2,457 feet. The Texas Company's No. 3 Hunter was also abandoned at 2,428 feet. Gulf Refining Co. made another location in the Dixie extension and will soon start drilling on its No. 6 Oden, 660 feet south and west of NE cor. of Section 18-19-14.

Lewis District

In the Lewis district of Caddo the Snake Creek Oil Co.'s No. 1 Levee Board after a small show of oil went to salt water and was abandoned at 2,328 feet. Fred R. Ryan made location for his No. 1 Dickson in Section 3-19-15 in the old Caddo Field. T. O. Adams and others' No. 1 Dickson cemented 6-inch at 2,423 feet, tested dry, with very small show of oil at 2,445 feet, and drilling at 2,455 feet.

In Bossier Parish, Nell & Lanier's No. 1 Biedenharn, which made a small showing of oil at 1,015 feet, is going to retest at 998 feet. Woodmansee and others' No. 1 Bollinger was abandoned as a dry hole at 3,532 feet. G. G. Nesbit and others began drilling on their No. 1 Leonard on November 6.

El Dorado Chief Oil Co.'s No. 1 J. M. Dance, a wildcat in Section 27-20-7 of Claiborne Parish, was shut down waiting orders at 2,240 feet. In De Soto Parish, Magnolia Petroleum Co. is drilling at 2,550 feet on No. 1 Anna Mason. Louisiana Oil Refining Corp., which is drilling a test in the center of a 5,000-acre block, No. 1 Louisiana Central Oil & Gas Co. (Louisiana Central Lumber Co.) in the SE cor. of Section 3-12-3e, is drilling at 111 feet. Indications are it will be a test for the Urania pay down to 1,700 feet.

Bridges Clark Oil Co.'s No. 2 Williams, in the NE Section 33-10-12, Pleasant Hill district of Sabine Parish, which made 125 bbls. natural in the first six hours from 3,224 feet, is flowing at the rate of about 487 bbls.

Magnolia Petroleum Co. completed a gas well in its No. 5 United States Government located in Section 29-21-5e of Morehouse Parish. At 2,363 feet the well gauged approximately 7,000,000 feet of gas with rock pressure of 970 pounds. In Ouachita Parish of the Monroe district, Greenwood Production Co.'s No. 3 Phillips was completed and gauged 3,000,000 feet of gas at 2,184 feet. Quite a number of new locations have been made in the parish by the Amalgamated Co., Austin & Jordan, Chauvin Gas Co., Hope Producing Co., Louisiana Gas & Fuel Co., Pipes & Mack, Magnolia Petroleum Co., Southern Carbon Co. and others.

Richland Parish

Last reports from Richland Parish were to the effect that the Northern Louisiana Gas Co. is still trying to kill offset crater by pumping water into No. 4 Boykin down to 2,390 feet. In this same parish, Palmer Corp. on its No. 4 Rhymer, total depth 3,127 feet, plugged back to 2,450 feet. Bahan & Bahan were experiencing some bad trouble with their No. 1 Bess and No. 2 Parks, both in Union Parish. The first named was shut down at 130 feet, while the last named well was abandoned on account of a blowout at 1,585 feet.

Standard Oil Co. is arranging to set liner in No. D-3 Bodcaw in Webster Parish at 4,700 feet, while Sarepta Oil Co. is waiting to set 6-inch in No. 1 L. S. Gardner at 2,881 feet.

There was little or no news of interest from activities in Arkansas outside of the fact that in Ashley County J. O. Marcum was reaming to the bottom in No. 1 McGarry at 3,198 feet. In Grant, Clark, Little River and Nevada Counties, four wells were shut down and there were no new locations made in any of these counties.

Crude Production

Daily average production of the pools in this area for last week follows:

LOUISIANA

	Bbls.
Caddo, light	10,700
Caddo, heavy	3,075
Homer	3,470
Haynesville	4,983
De Soto-Red River	4,689
Little Creek	330
Elm Grove	0
Bellevue	615
Cotton Valley	2,925
Urania	5,854
Total	36,691

ARKANSAS

El Dorado	8,750
Smackover, light	6,184
Smackover, heavy	45,100
Stephens	1,100
Nevada County	860
Lisbon	1,172
Total	63,166
Both States	99,857
Last week	100,781
Decrease	924

LOUISIANA-ARKANSAS PROVEN AREAS

NORTH LOUISIANA

BOSSIER PARISH—ELM GROVE

Company, farm and location—	Remarks:
La. Gas & Fuel Co.'s No. 1-A P. L. Elston, 1,980 ft. N, 660 ft. W, SE cor. Sec. 12-17-12	Began drlg. Oct. 26; cmtd. 12½-in. 123 ft.; drlg. shale 412 ft.
La. Gas & Fuel Co.'s No. 1 T. A. Lawrence, 3,300 ft. N and W, SE cor. Sec. 12-17-12	Location.
Palmer Corp.'s No. 14-B Hodges, C E½ SW, Sec. 24-17-12	Tested estimated 2,000,000 ft. gas; arranging to siphon 1,880 ft.
Palmer Corp.'s No. 1-A J. A. McDade, 2,310 ft. W, 660 ft. N, SE cor., Sec. 12-17-13	Began drlg. Oct. 25; cmtd. 12½-in. 124 ft.; drlg. shale 820 ft.

CADDO PARISH—GREENWOOD

Calatex O. & G. Co.'s No. 1-A Agurs, 819 ft. S, 157 ft. E, NW cor. SW, Sec. 7-16-16	Drlg. chalk 1,695 ft.
Eastern Carbon Co.'s No. 1 Z. Abney, Sec. 8-17-16	Drlg. 1,705 ft.

CADDO PARISH—HOSSTON

Bayou State Oil Corp.'s No. 18 Levee Board, 450 ft. N, 150 ft. E, SW cor. NW, Sec. 23-22-15	Drlg. 980 ft.

CADDO PARISH—MOORINGSPORT

C. B. Moore's No. 1 Buckalew, 2,000 ft. N, 1,000 ft. W, SE cor., Sec. 30-20-15	W.O.S.R. 200 ft. oil in hole.; T. D. 2,304 ft.

CADDO PARISH—DIXIE

T. C. Adams et als' No. 1 Dickson, 990 ft. E, 330 ft. N, SW cor. NW, Sec. 10-19-14	Drlg. 2,455 ft.
Eylers Oil & Gas Co.'s No. 1 Sentell, SW cor. NE, Sec. 9-19-14	Arranging test 2,447 ft.
Fitzsimmons Drlg. Co.'s No. 1 Sentell, C W½ NW SW SW, Sec. 10-19-14	Location.
Sam Gold's No. 3 Hunter, 660 ft. N, 660 ft. W, SE cor. SW NE, Sec. 17-19-14	Tested dry show of oil 2,410 ft.; casing 2,428 ft.
Ohio Oil Co.'s No. 4 Hunter, 330 ft. N and W, SE cor. NW NE, Sec. 17-19-14	Derrick.
Ohio Oil Co.'s No. 6 Hunter, 330 ft. S, 330 ft. W, NE cor. NW NE, Sec. 17-19-14	Cored S.W. sand; S.D; W.O; T.D. 2,482 ft.
Old River Oil Corp.'s No. 1 Byrd, Sec. 15-19-14 (no check)	Rigging up.
Ray-Dawes Drlg. Co.'s No. 4-A Hunter, Sec. 9-19-14	Completed; 75 bbls. 2,478 ft.
Standard Oil Co.'s No. 8 Hunter, Sec. 17-19-14	Location.
Standard Oil Co.'s No. 3 Henderson, 220 ft. N. 330 ft. W, SE cor. SW SE, Sec. 7-19-14	Dry and abd. 2,457 ft.
The Texas Co.'s No. 3 Hunter, 990 ft. W, 330 ft. N, SE cor., Sec. 8-19-14	S.W.; abd. at 2,428 ft.
The Texas Co.'s No. 6 Hunter, 165 ft. N, 330 ft. E, SW cor. Sec. 9-19-14	Cmtng. 6-in. 2,400 ft; bailing 2,436 ft.

CADDO PARISH—OIL CITY

Arrow Synd.'s No. 1 Pender, 200 ft. N, 440 ft. E, SW cor., NW NW, Sec. 11-20-15	Cmtd. 6-in.; drlg. plug.; T.D. 2,102 ft.
W. D. Chew's No. 5 fee, Sec. 33-21-16	Cmtd. 4½-in. 2,265 ft; T.D. 2,330 ft.
Gulf Ref. Co.'s No. 20-A Levee Board 1,570 ft. S, 268 ft. W, NE cor. NW, Sec. 34-21-16	Cmtng. 6⅝-in. 1,800 ft.
Magnolia Pet. Co.'s No. 19 Doan-Thigpen, 330 ft. N, 990 ft. W, SE cor. Sec. 6-20-15	Drlg. 2,211 ft.
Shreveport Oil Corp.'s No. 1 Guy, NW NE, Sec. 32-21-15	Abd. 2,300 ft.

(Continued on Page 121)

WILDCAT OPERATIONS IN LOUISIANA-ARKANSAS

NORTH LOUISIANA

BOSSIER PARISH

Company, farm and location—	Remarks:
Corbett et als' No. 1 Murff, SE cor. NE, Sec. 18-17-11	S. D. 990 ft.
Sam Gold's No. 1 McFarlin, SE cor. SW SW Sec. 7-19-13	Derrick pattern.
Nell & Lanier's No. 1 Biedenharn, SE cor., Sec. 23-21-14	Bailing to test 1 ft. sand.; T.D. 1,015 ft; arranging to re-test at 998 ft.
S. P. Lanier's No. 1 Le Rosen, 300 ft. S., 1,600 ft. W, NE cor. Sec. 26-21-14	Location.
G. D. Nesbit's No. 1 Leonard, 1,900 ft. N, 957 ft. E, SW cor. Sec. 20-19-13	Began drlg. Nov. 4; set 12½-in. csg. 225 ft.
Walker et als' No. 1 Antrim, NW cor. SE, Sec. 28-22-13	S.D. 3,021 ft.; made 57 ft. more hole; tested small show oil; arranging test 3,184 ft.
Woodmansee et als' No. 1 Bollinger, SE cor. NE, Sec. 9-22-11	Dry and abd. 3,532 ft.

CADDO PARISH

D. C. R. Oil Co.'s No. 2 Oden, 892 ft. W, 264 ft. S, NE cor. NE NW, Sec. 20-19-14	Dry and abd. 2,802 ft.
Haynes Bros.' No. 1 Oden, 1,650 ft. S., 330 ft. W, NE cor., Sec. 20-19-14	Cored sand showing S.W. 2,471 ft; W.O. 2,505 ft; may make deep test; waiting orders 2,505 ft.
Lide et als' No. 1 Levee Board, 200 ft. S, 200 ft. W, NE cor., Sec. 24-19-15	Tested dry 2,410 ft.; casing 2,418 ft; S.D. for repairs 2,418 ft.
R. W. Norton's No. 1 Hill, 630 ft. N, 1,260 ft. W, SE cor. NE, Sec. 22-22-16	Cmtd. 9-in. 3,680 ft; T.D. 3,701 ft; 16 ft. swbd. sand; tested S.W.; to deepen to 3,727 ft.
S. T. Oynett, trustee's No. 1 Dixon, SW cor., Sec. 10-19-14	W.O.S.R; 1,000 ft. oil; T.D. 2,444 ft.; flows about 70 bbls. after running swab.
I. N. Pharis, trustee's No. 1 Oden, NE cor. SE NE, Sec. 16-19-14	S.D. 2,322 ft.
Standard Oil Co.'s No. 2 School Land, 330 ft. S, 330 ft. E, NW cor., Sec. 16-19-14	Abd. at 2,882 ft.
Planters Oil Co.'s No. 1 Pittman, 200 ft. S, 200 ft. E, NW cor. NE, Sec. 23-19-14	Deep sand test 6 ft. broken sand 2,502 ft.; dry show oil; casing 2,530 ft; S.D. waiting orders 2,585 ft.

CALDWELL PARISH

Louisiana Oil Ref. Corp.'s No. 1 La. Central O. & G. Co., 200 ft. N, 210 ft. W, SE cor. Sec. 31-12-3e	Began drlg. Oct. 31.
Lochnager Pet. Co.'s No. 1 Taliaferro, 572 ft. E. 396 ft. S, C, Sec. 26-9-6	S.D. 900 ft.

CLAIBORNE PARISH

El Dorado Chief Oil Co.'s No. 1 Dance, C SW NE, Sec. 27-20-7	S.D. 2,240 ft.
Leue Oil Co.'s No. 1 Taylor, Sec. 16-22-6	Derrick.
Triangle Drlg. Co.'s No. 1 Kilpatrick, 660 ft. S, 660 ft. E, NW cor. SW NE, Sec. 7-19-5	Cmtd. 15½-in. 496 ft.; shut down 1,350 ft.; changing to heavier rig.

DESOTO PARISH

Benson Oil Co.'s No. 1 Harris, Sec. 6-10-13	Drlg. 525 ft.
Benson Oil Co.'s No. 1 Hill, 1,8455 ft. S, 1,26[illegible] ft. W, NE cor., Sec. 4-10-13	Began drlg. Oct. 13; S.D. for wtr. 100 ft.

(Continued on Page 124)

Humble Deep Sand Holds Attention

Shallow Sand Found at Danbury. Wildcat Test Northwest of Boling. Extension at Raccoon Bend. More Mykawa Tests

By Neil Williams
Staff Correspondent, Gulf Coast Fields

HOUSTON, Tex., Nov. 11.—The further display of a great potential production from the deep sands of Humble, the finding of a good looking shallow oil sand in the first test on the Danbury prospect in Brazoria County, one of the newest geophysical domes, and starting of a wildcat to test the northwest side of the Boling Dome in Wharton County were among the most interest developments in the Gulf Coast during the week. The prospect of more active proving up of the Mykawa prospect, south of Houston, with the completion of the second gas well; a mile extension of Raccoon Bend; record production increases in Refugio wells; and the abandonment of several deep wildcats which had been watched closely were other news of importance. At the close of the week a number of new dome tests were in sands preparing to test or were at interesting stages. Prolific production brought in within the past week was responsible for an increase in the daily average output of Coastal fields of 7,193 bbls.

Humble was chiefly in the limelight all week with the prolific production record being set by The Texas Company's No. 1 Dunman, which was completed last Monday with an estimated initial flow of 8,500 bbls. daily on a five-eighths-inch choke. Holding its flow steadily all week between 8,100 and 8,200 bbls. daily, the well was opened for a few hours Friday and flowed at the rate of 500 bbls. an hour, indicating what may be the tapping of the main pool of the deep horizon south of Humble.

Although only about 600 feet to the east of Humble Oil & Refining Co.'s No. 4 Williams, a small producer, the Dunman well is approximately 1,600 feet to the west and south of the present main production of the deep field. Like other deep oil at Humble, the oil is high gravity, being 43 degrees at a temperature of 95 degrees. The flow is from a total depth of 4,965 feet. The completion of this well is turning attention to Humble Oil & Refining Co.'s No. 1 Trahon which offsets it on the north and which has cemented casing at 4,554 feet preparatory to drilling it to test.

Another good well, although somewhat smaller, was completed at Humble early in the week, this being South Texas Petroleum Co.'s No. 11 Morris. This well, which offsets The Texas Company's No. 269 Landslide brought in several weeks ago flowing better than 4,100 bbls. and which later increased to 7,000 bbls., flowed for a short time at an estimated rate of 7,500 bbls., it was claimed, but a 24-hour estimate placed the initial production at 1,500 bbls. The latter is from a total depth of 5,339 feet on a half-inch choke.

The good showing made by No. 269 Landslide, which Saturday still was flowing at the rate of 4,160 bbls. daily, together with later developments in the deep sand development, would indicate that the major prolific deep production at Humble is just being tapped and may place Humble first among Gulf Coast fields in the near future.

Oil Show Near Danbury

Considerable interest was attached to the finding of a shallow sand showing oil in Shell Petroleum Corp.'s No. 1 Blakely-Winston in the H.T.&B. Survey No. 14, near Danbury in south central Brazoria County. This well has cemented 12½-inch casing at 1,565 feet to test the sand which is at 1,572-78 feet. The test is the first drilled at Danbury, a salt dome prospect checked by the Shell within the past few months.

Boling Dome Wildcat

Boling Dome of Wharton County which on numerous different occasions has been the scene of development plays, and which has been almost forgotten for several months by drillers, promises to come back into the limelight with the starting of a wildcat on the northwest side of the dome by the Houston Gulf Gas Co. This company has made location for No. 1 Fields, 150 feet from the north line and 150 feet from the east line of the tract. The northwest side of the dome is virtually virgin territory as most of the previous drilling has been on top the dome for shallow cap rock production and on the southwest, south and east sides. In view of the promising but otherwise not so reliable production which has been found on other parts of the dome, the wildcat on the northwest side is of more than ordinary interest.

Mykawa Tests

Promise of more active development at Mykawa, a new geophysical prospect on the south edge of Houston, is made with three new tests drilling. Higgins Oil & Fuel Co., a subsidiary of the Houston Oil Co., is rigging up for No. 1 Siadous, which is just north of Humble Oil & Refining Co.'s No. 1 Siadous, completed early in the week good for approximately 20,000,000 feet of gas from a sandy shale at a total depth of 3,453 feet. Humble also is rigged up for No. 2 Minnetex, while Watts Brothers' No. 1 Hubert is drilling, being in sand and boulders at 1,002 feet at latest report.

Humble's No. 1 Siadous is the second gas well completed at Mykawa, this following the bringing in several months ago of No. 2 Irvin, the discovery well. The Irvin well since has been showing a little oil, which has dripped from the condensate trap, and general indications are more favorable for the development of a field there. Until now only one rig has been operated, that being by Humble Oil & Refining Co., the largest leaseholder.

At Lost Lake, northern Chambers County, Pure Oil Co.'s No. 5 Mayes Saturday, although not entirely cleaned, was flowing by heads at intervals of from three to four hours and making an estimated 55 bbls. at each head from sand at 2,648 feet. This is the fourth well to be completed on this dome.

Refugio Area

Interest at Refugio was centered largely on Refugio Oil Corp.'s No. 1 Murphy and Mission Drilling Co.'s No. 1 Kuykendall, both of which have shown substantial production increases. The former, which formerly was completed for 650 bbls. in sand at 3,653-76 feet, increased its output early in the week to better than 1,100 bbls. and later was reported to have made further sharp gains, reaching for a time 95 bbls. an hour. This production would make it the largest well completed at Refugio. Mission's well was completed for 250 bbls. of pipe line oil at 3,666-71 feet, but increased its flow to 800 bbls., which also is a large well for the field. Two other completions were reported at Refugio, Houston Oil Co.'s No. 10 Pratt-Hewitt-Rooke, which first made only dry gas but which late in the week was flowing 100 bbls. daily of pipe line oil on a quarter-inch choke from a total depth of 3,703 feet, and Mission Drilling Co.'s No. 3 Shelly, flowing 120 bbls. of pipe line oil on an eighth-inch choke from sand at 3,656-83 feet. Saxet Oil Co.'s No. 1 Serafino tested dry at 3,689 feet but is to be deepened.

Daily Average Production

Daily average production of coastal fields for the week ending November 9 was:

TEXAS	
Allen	10
Barbers Hill	21,345
Batson	1,262
Big Creek	5,340
Blue Ridge	2,438
Brenham	175
Boling	1,324
Clay Creek	1,960
Damon Mound	495
DeWalt	11,645
Fannette	3,364
Goose Creek	5,501
Hankamer	600
High Island	1,025
Hull	9,771
Humble	17,265
Jasper County	40
Lost Lake	488
Markham	350
Nash	520
North Dayton	525
Orange	2,686
Orchard	74
Pierce Junction	12,095
Port Neches	1,294
Refugio	14,419
Raccoon Bend	8,518
Sheeks	496
Saratoga	973
Sour Lake	2,331
So. Liberty-So. Dayton	6,161
Spindletop	22,583
West Columbia	6,822
Total Texas	163,945
Week ending November 1	157,191
Increase	6,754

SOUTH LOUISIANA	
Anse La Butte	45
Bayou Blue	20
Bayou Bouillon	130
Black Bayou	52
Dog Lake	20
Edgerly	587
Jennings	1,614
Hackberry	4,962
Lake Barre	500
Lake Pelto	200
Lockport	3,713
New Iberia	35
Port Barre	50
Sorrento	79
Starks	384
Sulphur	6,200
Sweet Lake	17
Vinton	4,172
Welsh	200
White Castle	50
Total Louisiana	23,030
Week ending November 1	22,591
Increase	439
Total Gulf Coast	186,975
Week ending November 1	179,782
Increase	7,193

Raccoon Bend Extension

At Raccoon Bend, Austin County, Humble Oil & Refining Co. and Valley Oil Corp.'s No. 1 McClasland extended production approximately a mile to the north and east although it made only a small well, gauging 63 bbls. in the first 24 hours. Production is from a sand and shale at 3,120 feet, approximately the same depth as producers in the main field. The same operators' No. 6-A Deutrich at Raccoon Bend was completed flowing 183 bbls. of oil the first day from sandy shale at 3,320 feet.

Sun Oil Co. got a small well in its No. 1 J. Wilburn, a deep test on the southeast side of Barbers Hill, production being at 5,339 feet. Sunshine Oil Co.'s No. 1 Ellender, southeast side of old Hackberry, was completed good for 300 bbls. of oil at 3,140 feet, and on the same dome Yount Lee Oil Co.'s No. 3 Lacey was brought in flowing 900 bbls. of oil daily from 3,297 feet. Rycade Oil Corp. and Humble Oil & Refining Co.'s No. 2 Gulf Land on the west side of old

(Continued on Page 130)

GULF COAST FIELDS AND WILDCATS

Week Ended November 9

BARBERS HILL—CHAMBERS COUNTY

Mills Bennett Production Co.'s No. 1 Collier (southeast).. Drlg. shale showing oil 5,387 ft.
Mills Bennett Production Co.'s No. 2 Collier (southwest).. Derrick.
Mills Bennett Production Co.'s No. 2 Barber, north side.. Drlg. rock 1,976 ft.
Mills Bennett Production Co.'s No. 3 Smith (workover).. To pump 5,185 ft.
Mills Bennett Production Co.'s No. 4 Smith, east side ... Drlg. gumbo 2,685 ft.
Mills Bennett Production Co.'s No. 3 Hammon-Armstrong (southeast) ..... Drlg. gumbo and lime 3,978 ft.
Mills Bennett Production Co.'s No. 1 Wilburn (southeast). Rig.
Gulf Prod. Co.'s No. 1 Wilburn ..... Drlg. shale and lime 3,079 ft.
Humphreys Corp.'s No. 8-A Kirby, north flank ..... Fishing 6,440 ft.
Humphreys Corp.'s No. 7-H Kirby, east side ..... Cemented casing 4,998 ft.; sandy shale showing oil.
Humphreys Corp.'s No. 2-C Kirby ..... Drlg. hard lime 5,005 ft.
Humphreys Corp.'s No. 6-B Kirby (workover) ..... Bailed salt water 4,120 ft.
Humphreys Corp.'s No. 1 Higgins ..... Swabbed some oil in cap rock 841 ft.; to pump.
Humphreys Corp.'s No. 1 Scott ..... Drlg. anhydrite 1,345 ft.
D. B. McDaniels' No. 3 Woodward ..... Drlg. sand showing oil 5,425 ft.
Republic Production Co.'s No. 3 Kirby (southeast)..... Derrick.
Rexal Oil Co.'s No. 3 McLean, east flank ..... Drlg. sand and shale showing oil 5,179 ft.
Rexal Petroleum Co.'s No. 1 Smith (east) ..... Drlg. shale and boulders 1,773 ft.
Superior Oil Corp.'s No. 2 Illfrey (east) ..... Drlg. shale and lime 4,884 ft.
Sun Oil Co.'s No. 2 McKinney (southeast) ..... Pulling screen to deepen 5,731 ft.
Sun Oil Co.'s No. 1 Wilburn (southeast) ..... Tested salt water 5,466 ft.; milling 5,342 ft.
Sun Oil Co.'s No. 2 Wilburn, southeast ..... Drlg. sand and boulders 2,432 ft.
Sun Oil Co.'s No. 1 J. Wilburn ..... Comp. flowing 900 bbls. oils 5,339 ft.
The Texas Company's No. 1 Wilburn (southeast) ..... Casing cemented 5,053 ft.; total depth 5,093 ft.
The Texas Company's No. 2 Wilburn, southeast ..... Cemented casing 4,991 ft.
The Texas Company's No. 3 Wilburn, southeast ..... Comp. flowing 950 bbls. oil 3,135 ft.
The Texas Company's No. 1 Lawrence ..... Drlg. sticky shale 4,715 ft.
Yount Lee Oil Co.'s No. 3 Chambers, south ..... Rigging up to pump 5,238 ft.
Yount Lee Oil Co.'s No. 9 Chambers, south ..... Drlg. water sand 4,282 ft.
Yount Lee Oil Co.'s No. 4 Woodward, southeast ..... Drlg. sand and shale 4,589 ft.
Yount Lee Oil Co. No. 5 Woodward, southeast ..... Drlg. 276 ft.

BOLING—FORT BEND AND WHARTON

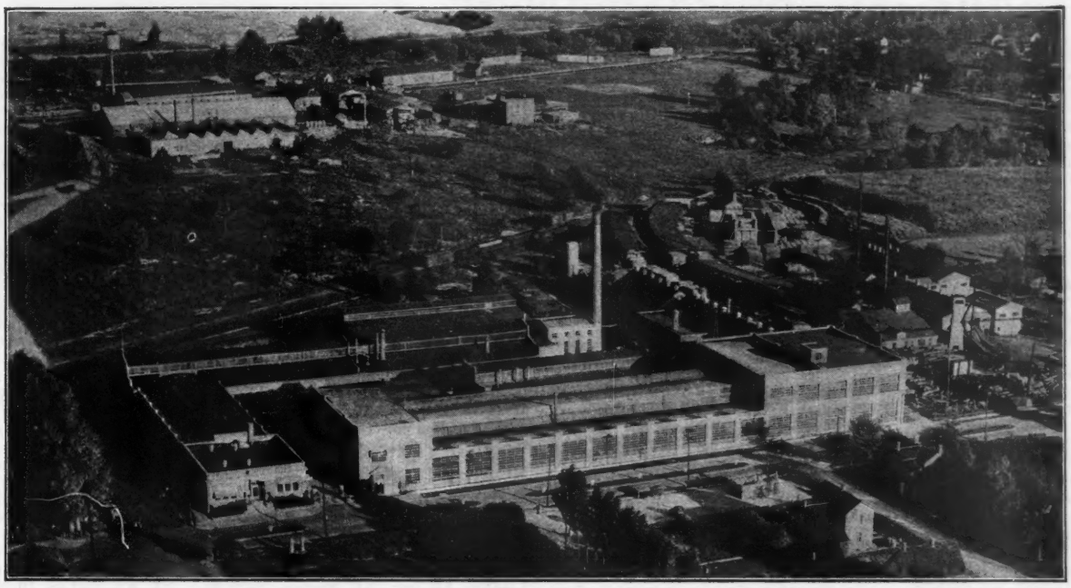
Houston Gulf Gas Co.'s No. 1 Fields (northwest)..... Location.
Sun Oil Co.'s No. 9 E. C. Farmer ..... Drlg. salt 1,835 ft.; top 1,824 ft.
Humble & Valley's No. 5 Austin College ..... Derrick.

RACCOON BEND—AUSTIN COUNTY

Humble & Valley's No. 3 Beal ..... Spudded.
Humble & Valley's No. 6-A Walton ..... Drlg. sticky shale 1,395 ft.
Humble & Valley's No. 7-A Walton ..... Derrick.
Humble & Valley's No. 6-A Deutrich ..... Comp. flowing 183 bbls. oil 3,320 ft.
Humble & Valley's No. 7-A Deutrich ..... Drlg. sticky shale 3,150 ft.
Humble Oil & Refg. Co.'s No. 8-A Deutrich ..... Derrick.
Humble & Valley's No. 9-A Deutrich ..... Derrick.
Humble & Valley's No. 10-B Deutrich ..... Drlg. sticky shale and lime 1,651 ft.
Humble & Valley's No. 4 Woodley ..... Derrick.
Humble & Valley's No. 5 Woodley ..... Derrick.

(Continued on Page 126)

AIRPLANE VIEW OF "THE LARGEST AND MOST MODERN SHOVEL PLANT IN THE WORLD"



Progress Pays Back

WITHOUT the lowly shovel no skyscrapers, no railroads, no mines would exist. Progress owes a mighty debt to shovels . . . and she is paying back in full.

This massive modern plant of The Wood Shovel and Tool Company is Progress' contribution to the shovel industry. Here, thousand upon thousand of Wood shovels ["Moly," "Big Fist," "Piqua"] are produced with uniform toughness and hardness—with even hang and balance. Buyers and users, alike, are quick to perceive their economy in wear—their efficiency in service.

THE WOOD SHOVEL AND TOOL CO.
PIQUA, OHIO

Eddy County Has a Spectacular Well

Grayburg's No. 2 Keely in West Maljamar District Shoots Oil Over Crownblock When It Comes In at 3,058 Feet

By Tolbert R. Ingram
Staff Correspondent, Rocky Mountain Area

DENVER, Colo., Nov. 11.—The Grayburg Oil Co.'s No. 2 Keely, in the West Maljamar district in Eddy County, New Mexico, encountered a break in the lime last week and flowed for 12 minutes. Two new locations were made in the Hobbs area in Lea County by Harrison and others on the northeastern side and the Ohio Oil Co. in the vicinity of the Humble Oil & Refining Co.'s No. 1 Bowers. The Transcontinental Oil Co.'s No. 1 McWhorter in De Baca County is reported to have hit a granite sand at 4,720 feet.

The Continental Oil Co. has resumed operations at its Boundary Butte test in San Juan County, Utah, where at a depth of 5,570 feet it became necessary to run a string of 3¾-inch special casing.

Colorado had no completions, but several wildcats are at interesting stages. One well was spudded in in the Florence-Canon City district in Fremont County.

Denver had a rumor that oil had been encountered in the Producers & Refiners Corp.'s No. 9 on the Big Sand Draw in Fremont County, Wyoming, but confirmation is lacking. The Midwest Oil Co. completed a Sundance well in Salt Creek making 2,402 bbls. the first 24 hours, and the Midwest Refining Co. completed its No. 1 Rosenberg on the Frannie Dome in Park County, which made 95 bbls. natural first 24 hours. The Cody Petroleum Co. is abandoning its No. 1 Garner on the west side of Oregon Basin.

NEW MEXICO

The Grayburg Oil Co.'s No. 2 Keely, C SE NE Section 24-17-29, in the West Maljamar district in Eddy County, New Mexico, made a spectacular display when it came in at 3,058 feet, shooting a column of oil over the crown block. The head continued steadily for 12 minutes, and then subsided. This well is one-fourth mile to the northwest of the same company's No. 2 Burch, C NW NW Section 24-17-30, which was completed last July at a total depth of 3,204 feet, making 45 bbls. the first 24 hours after completion, though it did better while being finished. The Keely well gives evidence of being a much better well. The first show of gas at 1,550 feet was about twice the quantity found in the Burch well at the same horizon. Its first important oil show was at 2,630 feet, with another show for about 10 bbls. at 2,865-70 feet, and another at 2,940-45 feet.

Two new locations were made this week in the Hobbs area in Lea County. One of these is Harrison and others' No. 1 Tatum, NW SW SW Section 35-18-38, approximately 1½ miles to the northeast of the Midwest Refining Co.'s No. 31 Capps, a producer. The other is the Ohio Oil Co.'s No. 1 State, NE cor. SW Section 30-18-38, in the same section and half a mile to the west of the Humble Oil & Refining Co.'s No. 1 Bowers.

Two of the several locations recently announced which still retain that status are the Walker Oil Corp.'s No. 2 Terry, SW cor. SE Section 10-19-38, an offset on the south to its producer, No. 1 Terry, and the Shell Petroleum Co.'s No. 1 McKinley, SW cor. Section 19-18-38, one mile northwest of the Humble's No. 1 Bowers. Walker's No. 1 Terry, NW SW SE Section 10-19-38, which came in as a producer early in October and extended the pool a mile to the southeast, is now listed as a completion at a total depth of 4,184 feet. The oil horizons were at 4,073-76 feet, 4,110-12 feet, and 4,150-55 feet. The elevation of the well is 3,590 feet, and the average production is 313 bbls. daily. The oil tests 35.8 gravity.

The Humble's No. 1 Bowers, C NE SE Section 30-18-38, which is still bottomed at 3,687 feet where it had a flow of 50,000,000 feet of gas, is reported to have succeeded in mudding off the gas and to be preparing to drill deeper. The Ohio Oil Co.'s No. 1 State, NE SE SW Section 9-19-38, is still bottomed at 4,208 feet and is swabbing from 60 to 90 bbls. of oil a day and 12 bailers of water. This is a decrease in the water from 21 bailers daily reported a week ago.

The Shell Petroleum Co.'s No. 1 Terry, SE SW NE Section 22-19-38, is drilling at 3,650 feet in anhydrite and lime, and the same company's No. 1 Thorpe, SW NW SE Section 10-19-38, is drilling at 1,298 feet in hard sand. The Midwest Refining Co.'s No. 13 Terry, SE NE SW Section 10-19-38, is drilling at 1,484 feet in the red beds, and its No. 24 State, NE SE SW Section 10-19-38, is standing at 1,668 feet with the 10-inch cemented on bottom. Cecil Bordages' No. 1 Hughes, CWL SE Section 27-19-38, is swedging the 8¼-inch at 2,756 feet.

San Simion District

In the San Simion district in Lea County, Cranfill & Reynolds' No. 2-B State, NW cor. Lot 9 Section 2-21-33, is bottomed at 1,475 feet in the red beds and fishing for bailer, and their No. 3-B State, SW NE NE Section 2-21-33, is drilling at 920 feet in red sand. The Amerada Petroleum Corp.'s No. 1 State, SW cor. Lot 7 Section 1-21-33, is drilling at 935 feet in red rock, and Snowden & McSweeny's No. 1 State, NW cor. SW Section 1-21-33, is drilling at 490 feet in red rock. The Empire Gas & Fuel Co.'s No. 3-B State, SW NE SE Section 5-21-35, is drilling at 3,685 feet in hard brown lime.

In the Eunice district in Lea County, the Empire Gas & Fuel Co.'s No. 1 Closson, NE NW SE Section 6-22-36, has recemented the 6⅝-inch at 3,577 feet. Total depth is 3,590 feet. This well had a flow of 110,000,000 feet of gas a day at this depth which was mudded and cemented off, but it broke through and the job had to be done over again. The Penn Oil Co.'s No. 1 State, NE Section 21-19-36, is bottomed at 3,449 feet and rigging up cable tools. The 8¼-inch was cemented at this depth. Fisher & Lowrie's No. 1 State, NE cor. NW Section 11-18-36, is ready to spud. The Continental Oil Co.'s No. 1 William Meyers, SW cor. NW Section 28-22-36, had a show of oil at 3,450-55 feet, and its No. 1 A. E. Meyers, SW SW Section 17-21-36, is coring at 3,625 feet.

In the Jal district in Lea County, the Empire Gas & Fuel Co.'s No. 1 Lindley, C NE SE Section 14-25-36, is shut down at 295 feet in red sand, and the Humble Oil & Refining Co.'s No. 2-A Lindley, C SW SW Section 13-25-36, is drilling at 1,235 feet in salt and potash. The top of the salt was at 1,225 feet. The Magnolia Petroleum Co.'s No. 1 Lindley, SE cor. NE Section 26-25-36, which had 43 joints of the 10-inch in the hole at a total depth of 2,961 feet, has recovered 16 joints. Cranfill & Reynolds' No. 1 Cushing, SW SE NW Section 23-24-36, is drilling at 2,785 feet in anhydrite.

Ochoa District

The Texas Pacific Coal & Oil Co.'s No. 2 State, NW cor. SW Section 21-23-36, Ochoa district, is averaging around 250 bbls. a day at a total depth of 3,712 feet. Buell & Hagen's No. 1 State C NE Section 33-11-35, Tatum district, is bottomed at 4,515 feet in lime and shut down, the contract depth having been reached. The top of the lime was at 4,248 feet. The Maljamar Oil & Gas Co.'s No. 2 Baish, NE cor. SW Section 21-17-31, Caprock area, is drilling at 4,115 feet in brown sandy lime and flowing and swabbing 150 bbls. a day from a second break in the lime at 4,107 feet.

In Eddy County Etz Brothers' No. 1 Etz, C SE SE Section 13-16-30, which has been fishing for a spear at a total depth of 2,670 feet, is reported to have recovered the tool. The hole is making an estimated flow of 5,000,000 feet of gas a day. Leonard & Levers' No. 1 Levers, NW cor. SE Section 21-17-29, is drilling at 2,130 feet in lime, the top being at 2,105 feet. Lockhart and others' No. 1 Parke, SE cor. Section 10-17-30, is drilling at 3,130 feet, and Naylor and others' No. 2 Danciger, NW cor. SW Section 18-17-31, is drilling at 2,200 feet. In other areas in Eddy County, R. D. Compton's No. 1 Stuart, NE cor. NW Section 28-29-27, was abandoned at 625 feet, and the Lockhart Oil Co.'s No. 1 McAllister, C NW Section 23-26-30, is drilling at 2,800 feet. Flynn, Welch & Yates have made a location 4 miles south of the Artesia Pool for their No. 1 State, NE NE Section 19-19-28. It is to be a deep test. R. D. Compton's No. 1 State, NW cor. Section 2-20-25, six miles west of Lakewood, has commenced spudding.

Chaves County

In Chaves County, the Star Oil Co.'s No. 3 Adams, NE cor. Section 25-17-17, Dunken Dome, is drilling at 3,100 feet in red sand. The top of the Glorietta was found at 2,005 feet and the top of the Abo at 2,655 feet. The Cactus Petroleum Co.'s No. 1 State, SE cor. Section 14-10-26, is drilling at 1,725 feet in lime and had another oil show at 1,690-98 feet. Rodgers and others' No. 1 State, Section 25-11s-26, is reported abandoned at 1,710 feet. This well is sometimes known as the White Oil Co.'s No. 1 Frank.

In De Baca County, the Transcontinental Oil Co.'s No. 1 McWhorter, SW NW Section 6-3s-22, is reported drilling in granite sand at 4,720 feet with 4,500 feet of salt water in the hole from 4,655-60 feet.

In Torrence County, H. L. Williams and others' No. 1 Staplin, NE cor. Section 16-8n-10e, is reported drilling in granite at 1,140 feet, the first granite appearing at 1,130 feet. In Valencia County, the Acme Development Co.'s No. 1 Santa Fe Railway, SW cor. NW Section 27-7n-4w, is reported drilling in granite wash at 4,212 feet, the first of that formation showing at 4,184 feet. In Otero County, the Southwestern-Tolarosa Oil Co.'s No. 1 State, Section 34-13s-8e, is reported abandoned, the last depth reported being 1,400 feet.

In San Juan County, the Reserve Oil Co.'s No. 2 Shaffer, SE cor. NE Section 1-21-14, Stony Butte, is reported drilling at 1,120 feet and to have found some oil in the Hospah sand at 1,100 feet. This location is one-fourth mile from a well drilled by the Midwest Refining Co. The acreage being drilled formerly was held by the Ohio Oil Co. The Kutz Canon Oil & Gas Co.'s No. 1 Day, SW cor. Section 20-28-10, is drilling at 964 feet in sand. The 10-inch was set at 930 feet.

UTAH

The Continental Oil Co. is preparing to resume operations on its Boundary Butte test in San Juan County, Utah, in Section 22-43-22, after being idle for several weeks awaiting the arrival of a special string of 3¾-inch seamless casing. This is now on the ground and is being

(Continued on Page 116)

THREE TURNER VALLEY TESTS LOOK LIKE CRUDE PRODUCERS

By Victor Lauriston
Staff Correspondent, Canadian Fields

CHATHAM, Ontario, Nov. 9.—In three different sections of Turner Valley three wells drilling in the horizons above the deep lime have what looks like a fair commercial production of light crude. In the central section Widney Petroleums' No. 1, LSD 11, Section 12-20-3w5, got light crude showings at 3,160 and 3,236 feet. A 24-hour test with an 88-foot bailer gave over 152 bbls. of 53.6 crude. It is reported No. 2 will be started at once. Widney Petroleums, Ltd., was incorporated this year with only 36 shareholders: President, Frank Freeze; vice president, Dr. O. H. Patrick; directors, J. McKinley Cameron, John I. McFarland, Emil Sick, R. C. Thomas, W. G. Peterson.

In South Turner Valley Merland Oils' No. 1, Section 27-18-2w5, got the Dalhousie sands with good shows of gas and oil and at 4,420 feet, about 40 feet in the sands, flowed light crude for a couple of hours. When the show was first struck a 4,400-foot column of mud was blown out of the hole. It will be deepened to the lime.

In North Turner Valley, Model Oils' No. 1 is at 5,366 feet drilling in the Dalhousie sands. It got a strong flow of light crude some distance above the sands, which was thought to have filtered upward through a fault, and a commercial producer is thought likely.

Recent developments also include the coming back into normal production of four large deep lime producers. Royalite's No. 4, LSD 4, Section 7-20-2w5, has now come back into full production with better than 400 bbls. a day crude naphtha recovery. Royalite's No. 6, LSD 16, Section 31-10-2w5, blew back into production, making 15,000,000 feet of wet gas with around 200 bbls. crude naphtha recovery. Dalhousie Oil Co.'s No. 1, LSD 4, Section 18-20-2w5, came back into production while diamond drill was being rigged up to clean out the hole. Normal production is around 230 bbls. Home Oil Co.'s No. 2, LSD 14, Section 20-19-2w5, in the south field, was also rigging up diamond drill to clean out when it came back to full production, about 350 bbls.

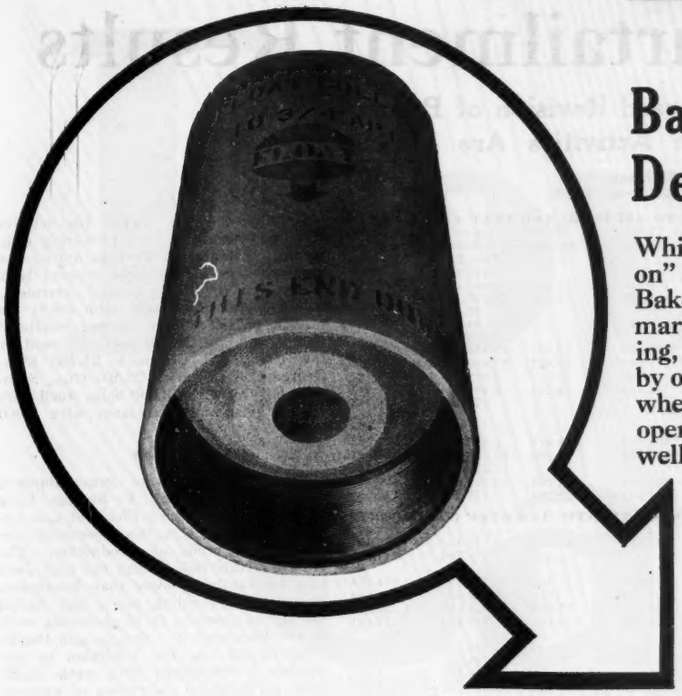
Unofficial and incomplete figures indicate the October production for the field will establish a new record with around 100,000 bbls.

South Turner Valley

In the South Turner Valley, Homestead Oils' No. 1, LSD 5, Section 16-19-2w5, is at 3,592 feet, getting the lime at a high point. East Crest's No. 2, LSD 4, has resumed drilling with some additional gas production around 3,117 feet.

Alberta Pacific Consolidated's No. 1, LSD 5, Section 20-19-2w5, at 4,445 feet,

(Continued on Page 128)



Baker Cement Equipment Has Demonstrated Its Superiority

While it is true, as a general proposition, that new ideas "catch on" slowly among oil operators, this has not been the case with Baker Cement Equipment, for it so quickly demonstrated its marked superiority over cast-iron equipment for Floating, Guiding, and Cementing, that it was given an enthusiastic welcome by oil men all over the world. Today you will find it in use everywhere, by reason of its much greater efficiency and economy in operation. It has made good on the job, in some of the deepest wells ever drilled.

Baker Cement Equipment, like all tools and equipment bearing the name "Baker", is safe and dependable—it has a wide margin of safety built into it, that takes care of even the most unexpected demands.

The Baker Cement Float Collar

The Baker Cement Float Collar, here illustrated, is a Baker-Formula Concrete plug cast and anchored in rounded grooves in a special seamless steel coupling, 16″ to 18″ in length. The concrete plug contains a specially-designed Celoron Ball Check Valve and Valve Seat.

The Baker-Formula Concrete used in this Collar has a compressive strength of 6002 pounds to the square inch—as compared with 2800 to 3700 pounds for ordinary good concrete. The Celoron Ball Check Valve has been tested to 5500 pounds to the square inch. These strengths are ample for the pressures encountered in even the deep wells, and will give absolutely reliable protection on long strings.

In the Kettleman Hills District, this Float Collar and the Baker-Burch Cement Float Shoe were used to land a string of 11⅜″ 60-pound casing, weighing 330,000 pounds and the string was set safely on bottom without a single hitch. This kind of performance is the usual thing with Baker Cement Equipment and is the reason for its enthusiastic welcome by oil men.

Baker Cement Line Is Complete

The Baker Cement Floating, Guiding and Cementing Equipment line is complete, and includes the following items: Baker-Burch Cement Float Shoe, Baker Cement Float Collar, Baker-Burch Side-Hole Cement Float Shoe, Baker-Burch HIGH Side-Hole Cement Float Shoe, Baker Cement Guide Casing Shoe, Baker Cement Baffle Collar with Hole, Baker Cement Solid Baffle Collar, and Baker Cement Bull Plug Casing Shoe.

You cannot buy insurance against accident, in the form of an insurance policy, but you can go far in this direction and prevent many otherwise unavoidable accidents by standardizing on the use of Baker Cement Equipment.

Baker Cement Equipment is the only line of its kind and it is covered by Patents Granted and Patents Pending. Once used its superiority will be at once evident. Specify it and see that you get it.

WRITE FOR LITERATURE: — For the sake of efficiency, economy, and safety, you should have an accurate and complete knowledge of Baker Cement Floating, Guiding, and Cementing Equipment. Complete descriptive literature will be sent on request. WHY NOT ASK FOR IT NOW?

Detailed Information Will Be Mailed on Request

Mid-Continent Branches
Tulsa, Oklahoma Houston, Texas
Export Sales Office
25 Broadway, New York City

BAKER OIL TOOLS, INC.
P. O. Box L, Huntington Park, Calif.
California Branches
Coalinga. Ventura. Taft, Bakersfield

Mid-Continent Distributors
B. & A. SPECIALTY CO.
220 E. Brady St., Tulsa, Okla.
2301 Commerce St., Houston, Texas

Don't Use Cast-Iron Equipment — Cement is Stronger and Better

California Sees Curtailment Results

Decline in Production and Upward Revision of Prices Give Evidence That Conservation Activities Are Succeeding

By L. P. Stockman
Staff Correspondent, California Fields

LOS ANGELES, Calif., Nov. 9—A substantial reduction in State production and an upward revision in crude oil prices was tangible evidence of the success resulting from conservation activities in California during the last week and a check indicates that State production will reflect a further curtailment in the near future. Conservation work at Elwood, Seal Beach, Santa Fe Springs and Long Beach reduced production but as only a small curtailment was effected at Ventura Avenue the State output may go lower if negotiations to reduce field production 30 per cent are carried forward to a successful conclusion.

It is also probable that a shut down may be effected in the west front area of the Kern River Field in lieu of a drastic reduction in the posted price for that oil. Contrary to prevailing reports, there was absolutely no cessation of production in the west front area of the Kern River Field during the past week. As a matter of fact, production showed an increase as a number of operators established a new potential production for their respective leases during the period in question. Operators have tentatively agreed to effect an early shut in at Kern River and something definite along this line will be undertaken within the next few days.

Substantial Decline

Daily production at Santa Fe Springs showed a substantial decline due primarily to crude oil curtailment and secondarily to the lack of new completions. Only five wells were completed in this field during the past seven day period but operators should make up for lost time soon as there are an exceptionally large number of drilling projects rotating ahead in the pay. George F. Getty topped the completion list by bringing in No. 29 flowing 7,870 bbls. of unusually clean 34.8 gravity oil daily from the Clarke zone at 8,000 feet. This new producer was of course subsequently pinched back in conformity with the curtailment agreement and its future allowable production will be based on decline curves. No. 26 Mitchell, which was recompleted approximately ten days ago, showed a pronounced increase following completion and subsequently built up to 7,150 bbls. of clean 33.9 gravity oil and 14,000,000 feet of wet gas daily before being pinched back in compliance with the limitation on production.

The General Petroleum, with 55 strings of tools to its credit, successfully finished No. 190-D Santa Fe but the output, 285 bbls. daily from 7,050 feet upon completion, was somewhate disappointing. The Texas Company successfully finished No. B-11 Patterson in the deep Clarke zone and this new well came in doing 1,380 bbls. of 34.6 gravity oil and 3,300,000 feet of wet gas daily from 7,947 feet. No. 10-A Patterson, which the industry has been watching closely because of the possibility of its having discovered a new productive horizon at 8,535 feet, is still held up with mechanical trouble.

Oscar Howard has not let any grass grow under his feet during the time that The Texas Company's No. 10-A Patterson has been held up with the result that his No. 7 Hathaway has already exceeded the depth of this project and may get production first as he has a good oil sand in the hole at 8,560 feet. The Shell Oil Co. did not finish any new wells at Santa Fe Springs during the week but did succeed in recompleting No. 13 Slusher doing 2,654 bbls. of unusually clean 34.2 gravity oil daily after redrilling and deepening it to 7,840 feet. This well was originally completed flowing 660 bbls. daily from the O'Connell zone at 6,844 feet in August of this year but was subsequently killed and drilling resumed following the discovery of the deep Clarke zone, from which it is now producing.

The Rio Grande Oil Co. also successfully recompleted a former upper zone producer this week when No. 2 Community was returned to production flowing 1,460 bbls. of clean 33.9 gravity oil daily from the Clarke zone at 7,913 feet. This well was originally completed in the Buckbee horizon flowing 1,560 bbls. per day from 5,820 feet during the early part of this year. The curtailment in production did not change the relative standings of the various producing companies at Santa Fe Springs during the past week as all of them pinched back in accordance with the general agreement. The General Petroleum still heads the production list with a current restricted daily output of 22,000 bbls., followed by the Union Oil Co. with 21,750 bbls., George F. Getty with 20,500 bbls., Standard Oil Co. with 13,000 bbls., Shell with 10,000 bbls. and Associated with 5,000 bbls.

Elwood

The Elwood Field of Santa Barbara County, like the Santa Fe Springs, Long Beach and Seal Beach Fields of Los Angeles basin, reflects the successful curtailment of crude oil production. The output of this field during the past week was substantially lower than production during the preceding seven day period due to the pinching in of producing wells by the Barnsdall, Rio Grande and Pacific Western Oil Co. The reduction in production accomplished this week represents an artificial restriction of approximately 30 per cent. It is the intention of operators at Elwood to keep daily production pinched in as low as possible consistent with economic development but it is quite probable in spite of this decision that field production will show temporary increases from time to time due to the completion of new wells. There are quite a number of drilling projects scheduled for completion in this field during the course of the next 60 days unless drilling is retarded and it is logical to assume therefore that daily production will at least remain relatively stable as the production of new wells should offset the normal decline in older producers.

The Barnsdall and Rio Grande successfully completed their second tideland producer this week when well No. 1 on tideland drilling permit No. 94 was brought in flowing 3,400 bbls. of unusually clean 35.6 gravity oil daily from 3,512 feet. This new producer was immediately pinched in to 2,750 bbls. daily and a further restriction will be made within the next few days in order to keep field production as low as possible. The Barnsdall and Rio Grande are drilling two other tideland projects out in the open ocean at the present time in addition to Nos. 9, 10 and 11 on the Bell Luton lease. Preparations are being made to start two more wells on the Bell Luton lease and to begin drilling operations on a second well on tideland drilling permit No. 88 on which the initial producer was completed a few weeks ago. The Elwood Exploration Co. and the Bankline Oil Co. are also working on potential producers at the present time and while the bit in each project is drilling ahead in the oil sand it remains to be seen whether these wells can be successfully completed on schedule due to the lack of adequate storage facilities. These operators may ultimately be successful in overcoming their difficulties but right now the prospect does not look any too encouraging.

State Interested

The State of California has assumed an aggressive attitude with regard to development work at Elwood and is prosecuting an action to open up a new road through the properties of the Barnsdall and Rio Grande in order to permit the Bankline and Honolulu Consolidated to move their anticipated production across these leases. State officials justify this action on the assumption that the State of California has a royalty interest in any production secured from tideland development and are therefore merely protecting the State's interest. No decision has been rendered by the court in this

TANKER SHIPMENTS FROM LOS ANGELES TO ATLANTIC AND GULF COAST PORTS

Commodity—	Total this week	Daily average	Total last week	Daily Average	This year to date	Same time last year
Crude oil	.....	.....	.....	.....	997,250	2,339,582
Fuel oil	.....	.....	.....	.....	457,175	143,471
Diesel and gas oil	65,028	9,290	196,885	28,126	2,364,712	1,745,589
Gasoline	730,661	104,380	480,475	68,639	18,016,157	12,334,562
Kerosene	.....	.....	.....	.....	49,750	.....
Naphtha distillate	.....	.....	.....	.....	81,750	339,100
Coastwise—						
Crude oil	370,811	52,973	414,590	59,227	23,476,004	21,107,331
Fuel oil	545,991	77,999	492,987	70,427	17,069,732	14,607,186
Diesel and gas oil	19,497	2,785	40,802	5,829	1,062,186	995,427
Gasoline	227,363	32,480	197,490	28,213	9,574,636	8,182,244
Kerosene	299	43	.....	.....	70,286	66,757
Naphtha distillate	.....	.....	.....	.....	.....	171,566
Exports—						
Crude oil	216,807	30,972	158,687	22,670	5,226,627	1,903,582
Fuel oil	385,836	55,119	197,539	28,220	15,856,911	19,667,521
Diesel and gas oil	81,394	11,628	.....	.....	2,356,849	2,000,121
Gasoline	277,333	39,619	253,581	36,226	10,521,310	6,572,420
Kerosene	105,480	16,497	7,662	1,095	2,812,045	3,719,590

TANKER SHIPMENTS FROM SAN FRANCISCO TO ATLANTIC AND GULF COAST PORTS

Diesel and gas oil	.....	.....	.....	.....	.....	342,425
Gasoline	80,141	11,449	77,870	11,124	2,131,183	1,830,132
Lubricants	.....	.....	.....	.....	138,706	277,151
Coastwise—						
Fuel oil	32,000	4,571	3,218	460	2,724,971	3,054,074
Diesel and gas oil	.....	.....	1,480	211	360,538	271,204
Gasoline	68,627	9,804	105,025	15,004	4,354,560	4,225,596
Kerosene	2,097	300	24,711	3,530	188,893	214,441
Exports						
Crude oil	.....	.....	.....	.....	121,603	96,250
Fuel oil	63,025	9,004	.....	.....	841,631	2,063,154
Diesel and gas oil	.....	.....	.....	.....	326,657	56,180
Gasoline	175,580	25,083	155,009	22,144	4,970,941	3,886,747
Kerosene	.....	.....	.....	.....	528,060	536,253
Lubricants	.....	.....	4,082	583	29,795	33,535

MOUNT PLEASANT PRODUCTION NOW EQUAL TO MUSKEGON FIELD

By Special Correspondent

MUSKEGON, Mich., Nov. 9.—With the completion of three new wells, one of which had an initial production equal to the aggregate of six new wells in the Muskegon Field last week, production of the Mount Pleasant Field of central Michigan had become practically the same as that of the older field in western Michigan.

Production of the Muskegon Field for the week ending Monday, November 4, at 7 a. m. was 8,250 bbls. of Dundee and 660 bbls. of Traverse crude. That of Mount Pleasant was estimated to be 8,600 bbls. Adding the flow of the new wells it is expected that each field will be making about 9,000 bbls. a day. The Saginaw Field is of little consequence in the total for the State as it averages only 220 and 250 bbls. a day.

The largest of the new completions at Mount Peasant was the Pure Oil Co.'s No. 5 J. Fox, SW NE, Section 13-14n-3w, Chippewa Township, Isabella County. It came in as a Dundee producer and made between 600 and 700 bbls. initial at 3,590 feet.

The Pure company's No. 2 Gibson, SE NW, Section 12-14-3, Chippewa Township, made only 40 bbls. initial at 3,586 feet.

The Mount Pleasant Oil & Gas Co.'s No. 2 Thompson-Bortz, NE NW, Section 12-14-3, Chippewa Township, made a small 15-bbl. well in the Dundee at 3,566 feet.

Muskegon Field

Three of the six completions in the Muskegon Field had an estimated initial production of 150 bbls. a day and the entire half dozen added but 650 bbls. to the field. The largest was the Michago Oil Development Co.'s No. 1 John B. Nichols, NE NW, Section 8-10-16. It made about 150 bbls. of oil and 2,000,000 feet of gas in the Dundee at 2,058 feet.

The Paragon Oil Co.'s No. 2 John Dornbush, NW SW, Section 8-10-16, swabbed 10 bbls. an hour after hitting plenty of oil but little gas in the Dundee at 2,002-05 feet. It was estimated good for 150 bbls. on the pump.

L. E. Kennedy and others deepened No. 4 Charles I. Giles, NE SE, Section 6-10-16. It made only 55 bbls. initial in the Traverse and about 150 bbls. in the Dundee at a total depth of 2,053 feet.

The Reed Oil Co.'s No. 6 Albert Heinz, NW SE, Section 8-10-16, was estimated good for 100 bbls. initial in the Dundee at 1,995-2,000 feet.

Another well with a similar initial flow of about 100 bbls. was the Muskegon Oil Corp.'s No. 4 Torrent estate, SW SE, Section 8-10-16.

The Henley Oil Co.'s No. 3 Jacob Koning, NW SW, Section 7-10-16, had several hundred feet of oil in the hole at 2,019-25 feet and was swabbed. It will make about 5 or 10 bbls. a day in the Dundee.

The Republic Oil Co.'s No. 3 George S. Brand, SE SE, Section 11-10-17, Laketon Township, and G. H. Schrack's No. 1 William Launstein, SW SE, Section 1-10-17, also Laketon Township, were plugged.

V. M. Voorhees has moved in to deepen No. 1 John B. Nichols of the Joliet-Morris Development Co., NE NW, Section 8-10-16. The Laurel Oil & Gas Co.

(Continued on Page 130)

Dow Caustic Soda

THE cleanliness, uniformity, and high quality of Dow Caustic Soda makes its use particularly advantageous in the refining of petroleum, mineral oils, vegetable oils and fats. Manufactured in solid, flake and liquid forms, it meets the most exacting requirements. Solid form is shipped in airtight steel drums containing 700 lbs. net. Flake form is packed in 100 lb. and 320 lb. net weight air-tight steel drums. Liquid is shipped in tank cars of 7000 gallon capacity. Many prefer the flake form for its ease of handling. Try Dow Caustic Soda. You will find Dow a reliable source of supply regardless of your requirements.

Dow Calcium Chloride
73-75% Solid, 77-80% Flake

Dow Calcium Chloride is used widely as a refrigeration agent. Its general high quality, freedom from magnesium and other objectionable impurities, is insurance against trouble from excessive corrosion. Refiners can use it as an efficient refrigeration medium in their wax and heavy grease plants. Prompt deliveries made from warehouse stocks carried in principal cities.

Dow Carbon Tetrachloride *99.9%*

This Dow solvent, cleaner and degreasing agent, when mixed in proper proportions with inflammable solvents such as Naptha renders them non-inflammable. Does not separate on fractional distillation, but may be redistilled and used over and over. An efficient dry cleaning agent. Cleans most delicate fabrics without injury and evaporates without residue odor.

Let us quote on your requirements of the above products

THE DOW CHEMICAL COMPANY
MIDLAND, MICHIGAN
Branch Sales Offices:
90 West Street, New York City—Second & Madison Streets, Saint Louis

DOW

action up to the present time and the outlook is not any too promising for decision favorable to the State. Interests representing the Honolulu Consolidated and Bankline have in the meantime petitioned the board of supervisors to institute condemnation proceedings and immediately start construction of a new road down to tidewater but action on this request has been held in abeyance notwithstanding the personal intervention of Attorney General Webb. In the meantime the Honolulu Consolidated and Bankline will probably have considerable difficulty in maintaining consistent production even though their respective tide land projects are ultimately completed as successful producers. Both of these companies have a new well nearing completion at present. The Pacific Western Oil Co. is making good progress on its second project in the Elwood Field of Santa Barbara County and this well is nearing the 3,000 foot level. Locations have been mapped for three new tideland wells by the Pacific Western and an early spud is anticipated as this company's tideland drilling permit looks exceptionally good in view of recent work and will justify additional drilling.

Long Beach

The largest well finished in the Long Beach Field during the past week was the Rawco Incorporated's No. 1 Lewis, which was completed during the early part of the week flowing 2,370 bbls. of clean 29.6 gravity oil and 2,400,000 feet of wet gas daily. This new well, located in the southeastern end of the field opposite The State Co.'s No. 1 Sievers flowing 2,050 bbls. per day, was finished with a 4¾-inch oil string cemented through perforations at 5,590 feet and is flowing under a pressure of 800 ponds. The Vesta Petroleum Co.'s No. 1 Signal, another completion this week, also registered satisfactory production upon being returned to production following a deepening job. This well, which was originally completed doing 480 bbls. per day from 6,712 feet in July of this year, was recompleted a few days ago flowing 610 bbls. of 29.8 gravity oil daily. This project, which was bottomed at 6,970 feet, was finished with a 4¾-inch liner carrying 545 feet of perforated.

The Richfield Oil Co.'s No. 5 Bernstein turned out to be an exceptionally good well upon completion this week in the Pliocene formation at 4,800 feet as the initial output, 665 bbls. daily, greatly exceeded all expectations. The significance which attaches to the completion of this well lies in the relatively shallow depth at which production was secured as practically all recent completions in the Long Beach Field have been finished in the deep Miocene. The overlying Pliocene formation does, however, yield a satisfactory completion from time to time and by a strange coincidence two large wells have been finished within a few days of each other.

Just previous to the completion of No. 5 Bernstein, the Hancock Oil Co. finished its No. 20 in the Pliocene at 4,317 feet and likewise secured substantial production. This project, which was listed for completion last week as a 120 bbl. well, subsequently built up to 1,175 bbls., the oil being exceptionally clean and testing 23.1 degrees. The Hancock Oil Co. added another well to its list of producers this week by recompleting No. 24 Signal, although this project, unlike No. 20, was carried down into the Miocene formation and finished at 6,673 feet. Upon being returned to production, this former upper zone producer, which has 1,265 feet of oil sand, showed an initial of 320 bbls. daily. The Dabney-Johnston Oil Co., which has successfully built up a substantial production in the Long Beach Field during the past year or so, has listed No. 41 Signal at 5,780 feet, from which depth it was brought in producing 870 bbls. of exceptionally clean 27.5 gravity oil daily. This new producer, which was finished with a 4¾-inch liner, including 284 feet of perforated, required nearly a week to get under way ultimately showed a satisfactory production after building up consistently for several days.

Midway-Sunset

Considerable new work is getting under way out in the Maricopa flats section of the Midway-Sunset Field of Kern County, and a number of new locations will be flagged within the next week or ten days. This section of the Midway-Sunset Field, which covers a fan shaped area immediately north of Section 17-11-23, has been undergoing a consistent development campaign ever since the Signal Oil & Gas Co. finished its No. 2 Sunset as a substanial producer more than a year ago. It has only been recently, however, that drilling operations have shown a consistent substantial increase. Heretofore development work has been centered in a relatively small area in Section 8-11-23 but the scope of work has been broadened by substantial completions from time to time and now covers all of Sections 7, 8, 9, 16 and 17 in Township 11 north Range 23 west of the San Bernardino Base and Meridian.

The Standard Oil Co. finished its first successful completion in this area during the past week when No. 7-K in Section 9-11-23 was brought in flowing 100 bbls. an hour from 3,739 feet. This project was beaned in subsequent to completion but nevertheless tanked 1,740 bbls. during the initial 24 hour test and will probably hold up to this rate for an indefinite period. This new producer is located on property owned in fee by the Standard Oil Co., the acreage in question having been acquired several years ago when the Standard took over the holdings of the Pacific Oil Co. The Wellington Oil Co. has just brought in an exceptionally good well on a substantial block of acreage leased from Charles A. Son. This new well, located in Section 8-11-23, is the highest producer on the Sheehan structure and definitely proves up a considerable amount of additional acreage for big production. The Wellington's new producer is flowing under a pressure of 450 pounds but in spite of being severely beaned in it is making 1,680 bbls. of clean pipe line oil and 1,000,000 feet of natural gas daily from 3,396 feet. The gas from this new producer averages approximately two gallons of natural gasoline for each 1,000 feet of gas treated.

There are at present 23 strings of tools in operation in the various sections just mentioned but this number should be increased within the next few days as rotary drilling equipment is being rigged up in six additional projects. New tests starting include the Rio Grande's No. 3 Havenstrite, No. 2 Kerckhoff of the North American, No. 3 Havenstrite of the Reservoir Hill Gasoline Co., No. 3 Wallace of the Hancock Oil Co., No. 5 Havenstrite of the California Western Oil Co. and No. 4 Sunset of the Lakeview Oil Co. The relatively large amount of work under way for the limited area involved indicates the probability that a number of new wells would be completed during the course of the next thirty days, especially since these wells are quite shallow, the completion depth averaging around 3,350 feet.

Kern River

The most important development in the Kern River Field is the movement under way to shut down all producing wells located out in the west front and every indication points to the probability that production in this area will be reduced in the near future either by a gentlemen's agreement between lessors and lessees or a substantial reduction in the posted price which would permit operators to shut in if operating at a loss. This oil is not desired by refiners and current production is consequently going into storage due to the over supply of heavy fuel oil. It is quite obvious therefore that a reduction in the production of heavy oil would be greatly beneficial and it is almost imperative that a substantial reduction be effected, especially in the Kern River Field. A sympathetic curtailment at Mount Poso and Round Mountain would also be in order if this could be arranged. It is interesting to note that operators have been quite willing to suspend production in all three of these fields but have been prevented from doing so by property owners.

The General Petroleum successfully completed No. 10 Young in the west front section of the Kern River Field during the past week and subsequently spudded in No. 11 Wetmore, a new well. The General Petroleum's new completion pumped 154 bbls. of 15.1 gravity oil daily from 2,049 feet, the hole having been completed with an 8⅝-inch oil string carrying 241 feet of perforated. The General Petroleum also finished an exceptionally satisfactory completion in the Fruitvale Field of Kern County as far as production is concerned when No. 4 Hensley was brought in doing 740 bbls. of 22.1 gravity oil daily from 3,974 feet. Drilling operations at Fruitvale have been reduced to an absolute minimum in view of the overproduction situation and the unfavorable quality of oil produced by this district. The Pacific Western Oil Co. added a new well to its list of producers in the Mount Poso Field this week when No. 5 King was completed at 1,601 feet, from which depth it showed a potential daily production of 200 bbls. The Ohio Oil Co. successfully completed a new well in the Belridge Field of Kern County a few days ago when No. 23 in Section 30-28-21 was brought in pumping 15 bbls. daily.

IMPORTANT SOUTHERN CALIFORNIA WILDCATS

Ohio Oil Co., No. 1 Del Rey, Los Angeles Co.	21- 2-15	6,160	hd. sd. drilling
Marblehead Land Co., No. 1 Santa Monica, Los Angeles Co.	1- 2-19	1,880	sd. drilling
Clearwater Oil Co., No. 1 Bellflower, Los Angeles Co.	21- 3-12	788	sd. drilling
Continental, No. 1 Alamitos, Los Angeles Co.	34- 4-12	2,416	hd. sd. drilling
Burlingham Pet. Co., No. 1 Compton, Los Angeles	17- 3-13	2,204	cleaning out
Big Boy Drlg. Co., No. 1 Compton, Los Angeles Co.	23- 3-15	mtl.	building rig
Hanners, George, No. 1 Watts, Los Angeles Co.	8- 3-13	2,882	sd. sh. drilling
Cal. Well Drlg. Co., No. 1 Compton, Los Angeles Co.	11- 4-13	8,500	fishing
Archer Oil Co., No. 1 Watson, Los Angeles Co.	17- 4-13	3,911	hd. sd. drilling
Russell Oil Co., No. 2 Joughin, Los Angeles Co.	23- 3-17	2,402	gr. sh. drilling
Pomona Oil Co., Well No. 1, Los Angeles Co.	32- 1- 8	1,220	cleaning out
Anchor Oil Co., No. 1 Puente, Los Angeles Co.	19- 2-10	4,820	suspended
Rucker, R. C., No. 1 Puente, Los Angeles Co.	27- 2-10	2,415	sd. sh. drilling
The State Co., No. 1 Puente, Los Angeles Co.	5- 2-10	1,901	hd. sd. drilling
Urmi Oil Co., No. 1 Puente, Los Angeles Co.	31- 2- 8	717	cemented
Los Gatos Oil Co., No. 1 El Monte, Los Angeles Co.	16- 1-11	1,255	gr. sd. drilling
Union Oil Co., No. 1 Richfield, Los Angeles Co.	13- 3- 9	1,704	hd. sd. drilling
Superior Oil Co., No. 1 Atwood, Los Angeles Co.	33- 3- 9	4,520	abandoned
Coastline, No. Devils Canyon, Los Angeles Co.	21- 5-17	1,608	gr. sd. drilling
Martin, J. W., No. 1 Newhall, Los Angeles Co.	22- 1-17	550	gr. sd. drilling
Consolidated Oil Co., No. 1 Newhall, Los Angeles Co.	22- 3-16	233	sd. drilling
Anderson, P. B., No. 1 Hasley Canyon, Los Angeles Co.	1- 3-16	688	cemented
Shell, No. 1 Bolsa, Orange Co.	18- 5-11	1,040	sd. drilling
Shell, No. 1 Coyote, Orange Co.	28- 3-10	6,050	cleaning out
Standard, No. 1 Coyote, Orange Co.	21- 3-10	Rig	rigging up
Beard, G. F., No. 1 Brea Canyon, Orange Co.	30- 2- 9	1,000	suspended
Mesa Pet., No. 1 Newport, Orange Co.	21- 6-10	3,914	plug back
Western Gulf, No. 7 Newport, Orange Co.	21- 6-10	706	sd. drilling
Oil Well Eng. Co., No. 1 Newport, Orange Co.	21- 6-10	2,606	testing
Oil Well Eng., Co., No. 2 Newport, Orange Co.	21- 6-10	mtl.	building rig
Hall Pet. Co., No. 1-A Murrietta, Riverside Co.	23- 7- 3	701	cemented
Hemet Pet. Co., No. 1 Ward, Riverside Co.	9- 5- 1	3,403	suspended
Imperial Valley Oil Co., Well No. 1, Imperial Co.	32-11-10	2,980	suspended
Turner, S. S., No. 1 Escondido, San Diego Co.	25-12- 2	3,005	sd. sh. drilling
McGregor Synd., No. 1 Del Mar, San Diego Co.	17-14- 3	505	sd. drilling
Borderland Oil Co., No. 1 Encinitas, San Diego Co.	X-13- 4	1,095	sd. sh. drilling
China American Oil Co., No. 1 Oasis, San Bernardino Co.	17- 4- 4	....	grading
Grey, H. H., No. 1 Redlands, San Bernardino Co.	25- 1- 2	2,380	hd. sd. drilling
Duncan, N. I., No. 1 Mojave, San Bernardino Co.	8- 4- 6	mtl.	building rig

IMPORTANT NORTHERN CALIFORNIA WILDCATS

Union, No. 1 Buel Canyon, Santa Barbara Co.	X- 7-31	2,155	br. sh. drilling
Western Gulf, No. 2 Gaviota, Santa Barbara Co.	X- 5-23	3,160	testing
Standard, No. 1 Point Conception, Santa Barbara Co.	X- 5-34	2,609	redrilling
Standard, No. 1 Point Arguello, Santa Barbara Co.	35- 6-36	2,042	redrilling
Gaviota Oil Co., No. 1 Lompoc, Santa Barbara Co.	9- 7-35	2,677	hd. sd. drilling
Calif. Oil Prop., No. 1 San Marcos, Santa Barbara Co.	3- 4-28	2,690	Sespe-drilling
Carey, A., No. 1 Goleta, Santa Barbara Co.	1- 4-28	1,790	set pipe
General Pet., No. 1 Goleta, Santa Barbara Co.	21- 4-28	4,533	gas well-idle
General Pet., No. 2 Goleta, Santa Barbara Co.	21- 4-28	2,560	sd. sh. drilling
Petroleum Securities, No. 1 Goleta, Santa Barbara Co.		5,280	cleaning out
Standard, No. 2 Goleta, Santa Barbara Co.		118	sd. drilling
Tannehill, L. B., No. 1 Elwood, Santa Barbara Co.	24- 4-29	3,145	sd. sh. drilling
Standard, No. 1 County Farm, Santa Barbara Co.	11- 4-28	614	sd. sh. drilling
System Oil Co., No. 1 Orcutt, Santa Barbara Co.	36-10-34	4,297	suspended
Keystone Oil Co., No. 1 Santa Maria, Santa Barbara Co.	33-10-34	4,250	suspended
Wildcat Oil Co., No. 1 Santa Maria, Santa Barbara Co.	20-10-35	3,590	br. sh. drilling
Pacific Western, No. 1 Gilbraltar, Santa Barbara Co.	14- 5-27	1,580	sd. sh. drilling
Gilmore Oil Co., No. 1 Gilbraltar, Santa Barbara Co.	1- 5-28	mtl.	building rig
Shell, No. 1 Summerland, Santa Barbara Co.	18- 4-25	1,160	sd. sh. drilling
Continental, No. 1 Carpenteria, Santa Barbara Co.	33- 4-25	4,130	gas well-idle
Continental, No. 2 Carpenteria, Santa Barbara Co.	33- 4-25	4,560	fishing
Standard, No. 5-9 Saticoy, Ventura Co.	10- 2-22	8,154	redrilling
Bolsa Chica, No. 1-A Temescal, Ventura Co.	4- 4-18	1,170	hd. sd. drilling
Associated, No. 1 Rincon, Ventura Co.	19- 4-24	mtl.	building rig
Miley, E. J., No. 2 Red Mountain, Ventura Co.	7- 3-23	1,930	hd. sd. drilling
Frank Oil Co., No. 1 Fillmore, Ventura Co.	35- 4-20	2,168	suspended
Continental, No. 3 Sulphur Mountain, Ventura Co.	21- 4-22	5,100	hd. sd. drilling
Lockwood Oil Co., Well No. 1, Ventura Co.	28- 8-21	680	hd. sd. drilling
Milham Explt'n., No. 1-A Buttonwillow, Kern Co.	8-28-23	4,662	gas well-idle
Milham Explt'n., No. 2 Buttonwillow, Kern Co.	8-28-23	2,730	gas well-idle
Milham Explt'n., No. 3 Buttonwillow, Kern Co.	8-28-23	2,694	gas well-idle
Milham Explt'n., No. 4 Buttonwillow, Kern Co.	6-28-23	2,670	gas well-idle
Milham Explt'n., No. 5 Buttonwillow, Kern Co.	5-28-23	2,500	gas well-idle
Milham Explt'n., No. 6 Buttonwillow, Kern Co.	28-28-23	2,676	gas well-idle
Milham Explt'n., No. 7 Buttonwillow, Kern Co.	6-28-23	2,720	suspended
Milham Explt'n., No. 8-A Buttonwillow, Kern Co.	8-28-23	2,673	gas well-idle
Milham Explt'n., No. 9 Buttonwillow, Kern Co.	8-28-23	4,912	redrilling
Milham Explt'n., No. 10 Buttonwillow, Kern Co.	8-28-23	2,672	suspended
Elmer Oil Co., No. 1 Bena, Kern Co.	15-30-30	3,750	hd. sd. drilling
Elmer Oil Co., No. 1-A Rosedale, Kern Co.	33-29-26	5,260	suspended
General Pet., No. 1 Rosedale, Kern Co.	13-29-26	4,165	br. sh. drilling
The Texas Company, No. 1 Edison, Kern Co.	23-29-29	2,711	sd. sh. drilling
Symark Oil Co., No. 1 Edison, Kern Co.	24-29-29	2,130	cleaning out
McVey, Max, No. 1 Jasmine, Kern Co.	23-25-27	Rig	idle
Shell Oil Co., No. 1 Lerdo, Kern Co.	5-29-27	5,765	hd. sd. drilling
Union, No. 2 San Emidio, Kern Co.	5-10-21	3,666	reaming
Mallery, Willard, No. 1 San Emidio, Kern Co.	9-10-23	185	sd. drilling
Currency Pet. Co., No. 1 Jacalitos, Fresno Co.	28-21-14	2,606	suspended
Knudsen, John, No. 1 Jacalitos, Fresno Co.	14-21-14	494	sd. drilling
Rio Grande Oil Co., No. 1 Kerman, Fresno Co.	14-13-17	2,868	sd. sh. drilling
Petroleum Securities, No. 1 Huron, Fresno Co.	20-20-16	695	suspended
Petroleum Securities, No. 2 Huron, Fresno Co.	28-20-16	6,710	gr. sd. drilling
Union, No. 1 Huasna, San Luis Obispo Co.	34-32-15	4,060	br. sh. drilling
Union, No. 1 North Huasna, San Luis Obispo Co.	12-32-14	4,700	gr. sh. drilling
Midwest Refining Co., No. 1 Huasna, San Luis Obispo Co.	34-31-15	2,212	pipe froze
Panorama Oil Co., Well No. 1, San Luis Obispo Co.	7-31-21	4,019	cleaning out
Paso Robles Synd., No. 1 Creston, San Luis Obispo Co.	27-27-11	3,742	br. sh. drilling
Latin American, No. 1 Shandon, San Luis Obispo Co.	31-27-15	3,910	plug back
Colusa Oil Co., Well No. 1 Colusa Co.	31-15- 4	680	hd. sd. drilling
Humboldt Oil Co., Well No. 1, Humboldt Co.	6- 2- 1	3,041	suspended
Kuhns, H. L., Well No. 1, Merced Co.	8-12-19	660	suspended
Foster & Hammil, Well No. 1, Alameda Co.	21- 3- 3	1,166	hd. sd. drilling
Shell, No. 1 Dudley, Monterey Co.	15-22- 9	4,740	sd. sh. drilling
Chessher, H. B., No. 1 Dudley, Monterey Co.	8-22- 9	245	suspended
Union, No. 1 King City, Monterey Co.	8-22- 8	2,390	br. sh. drilling
Standard, No. 1 King City, Monterey Co.	23-22- 7	2,230	br. sh. drilling
Tuck Oil Co., No. 1 Los Gatos, Santa Clara Co.	15- 8- 1	852	suspended
Penn Western, No. 1 Tulare Lake, Kings Co.	24-21-18	1,338	set pipe
Dudley Ridge Synd., No. 1 Tulare, Kings Co.	12-23-19	1,305	gas-shut in
O'Donnell, J. E., No. 1 Dudley Ridge, Kings Co.	7-23-20	1,911	sd. sh. drilling
Porter, H. B., No. 1 Devils Den, Kings Co.	9-24-17	2,250	br. sh. drilling
Getty, Geo. F., No. 1 Button, Madera Co.	18-13-16	564	sd. sh. drilling
Twin State Oil Co., No. 1 Soldani, Mendocino Co.	14-12- 7	1,230	sd. sh. drilling
Elmer Oil Co., No. 1 Timbers, San Joaquin Co.	6- 3- 9	....	location
Barnhart Trust, No. 1 Oakdale, San Joaquin Co.	3- 2-10	1,640	sd. sh. drilling
White, Roy, No. 1 Pixley, Tulare Co.	8-23-26	2,377	sd. sh. drilling
Terminal Oil Co., No. 1 Tulare, Tulare Co.	29-20-25	2,984	br. sh. drilling
Terra Bella Oil Co., No. 1 Porterville, Tulare Co.	35-22-27	mtl.	building rig

"BJ"

ROD ELEVATORS AND HOOKS

DUNN SUPER SAFETY

This is the only Rod Elevator that opens from either front or back, thereby adapting itself to any manner of rod handling.

FOR *Speed* AND *Safety*

This is the Rod Hook with the exclusive spring feature.

A COMBINATION HARD TO BEAT

Oil Tool Division of

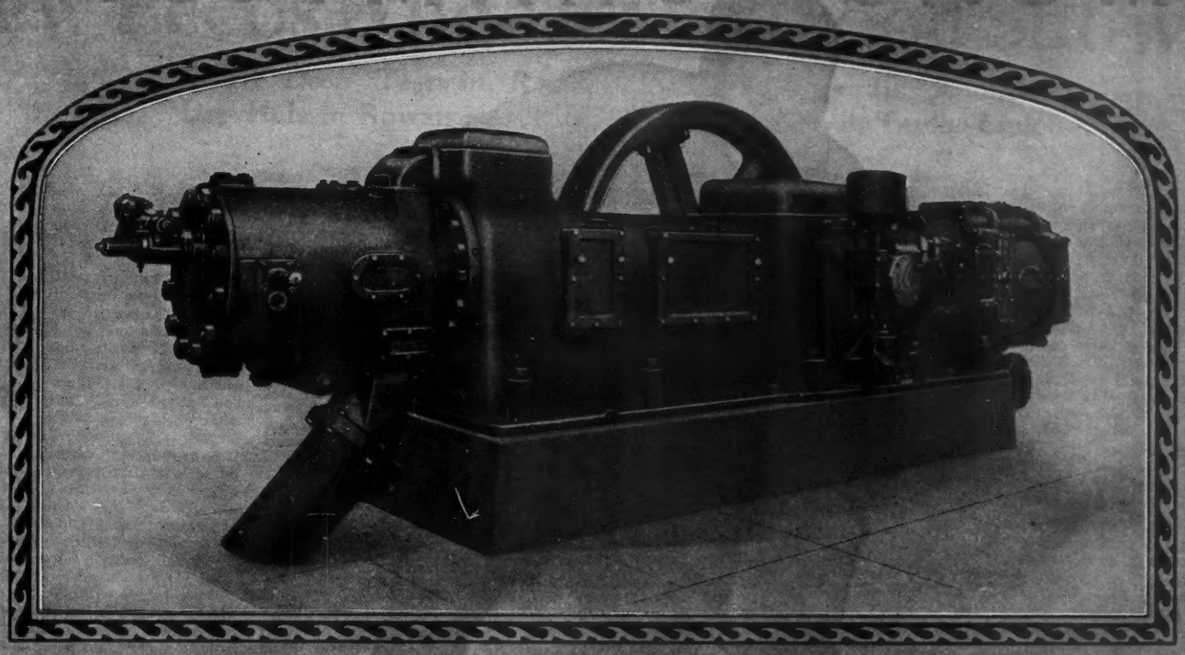
BYRON JACKSON CO.

Tulsa, Okla. *(Warehouse)*
214 E. Brady St.
Oklahoma City *(Warehouse)*
2603 So. Walker Street

2150 E. Slauson Avenue
Los Angeles, California
Houston, Texas
1915 Post Dispatch Bldg.

Fort Worth, Texas
814 Dan Waggoner Bldg.
New York City
1245 Graybar Bldg.

Their Ship
Came In
Success Is Largely a Matter of Choosing Wisely



SUCCESS is as much a matter of head work as it is of hard work. Haven't you often heard it said of someone who wins promotion: "Well, he used his head"?

Men entrusted with the responsibility of choosing major items of plant equipment often stand or fall in the eyes of their superiors by the measure of performance such equipment delivers.

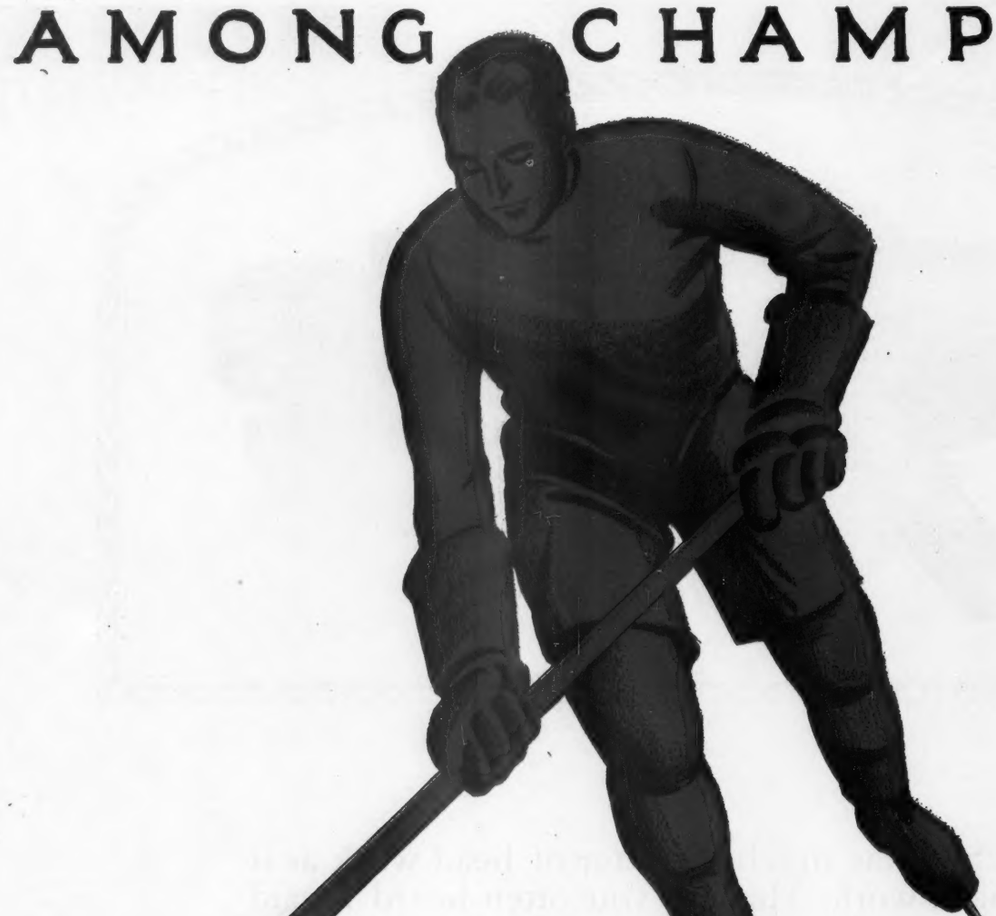
In buying gas engines or compressors, no man need ever take a chance. Thoughtful consideration and searching investigation invariably point the way to Cooper-Bessemer.

In 96 years of engine building, no Cooper engine or compressor has ever been permitted to betray the judgment of its buyer.

THE COOPER-BESSEMER CORPORATION
Formerly The C. & G. Cooper Co. and The Bessemer Gas Engine Co.
Mount Vernon, Ohio Grove City, Pa.
Branch offices in all the principal oil and gas fields

You're Always Safe in Choosing a Cooper-Bessemer

AMONG CHAMPIONS



LEG STRENGTH TELLS

Leg strength, above all other things, marks a champion. Without exceptional power, without endurance of the legs—in a man or in a derrick—the title of Champion cannot be attained.

Moore Champion Derrick leg sections are of steel pipe—seamless steel pipe—40-50 carbon seamless steel pipe. Nothing in commercial use is as strong for this purpose.

LEE C. MOORE AND COMPANY, INC.

ESTABLISHED 1907

PITTSBURGH · TULSA

New York Offices: Oilfield Equipment Co., 30 Church Street, New York, N. Y.

DALLAS, TEXAS WICHITA, KANSAS CASPER, WYO. SHREVEPORT, LA. HOUSTON, TEXAS

Stocks in All Principal Fields

THE Moore Champion DERRICK

New Pecos Wildcat Has Good Showing

Third Deep Test in Reagan County Blows In. Another Dry Hole in Rowan and Tong Area; Producers in Taylor-Link

By L. E. Bredberg
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., Nov. 11.—Again Pecos County registered a good showing in another wildcat area, while the third deep test in Reagan blew in and brought more attention to deep tests in the Big Lake Pool and the Permian Basin. The Rowan & Tong area suffered another dry hole, while the Taylor-Link Pool added a couple of wells to its number of producers.

The Kirby extension to Howard and Glasscock pools increased its production by four this week, all being rather good wells, E. L. Smith's No. 1 Coffee in Section 22, Block 33, being probably the best well with an initial production of 1,440 bbls. from total depth of 2,255 feet, pay at 2,095 feet. The Sun Oil Co. completed its No. 3 Phillips in Section 14, Block 33, for 50 bbls. per hour from pay encountered at 2,083 feet. Total depth of the well was 2,300 feet. The next best producer was the Kirby Oil Co.'s No. 1 Baker, which made 45 bbls. per hour from pay topped at 2,090 feet, total depth 2,285 feet. This well is located 330 feet from the north and west lines of Section 23, Block 33, Glasscock County.

Shell Petroleum Corp.'s No. 1 Coffee, located in the SE cor. of Section 15, Block 33, T.&P. Survey, last week's half-mile extension to the Kirby Pool in Glasscock County, swabbed and bailed 1,068 bbls. of oil and the same amount of water for 24 hours on a test. Total depth of the well is 2,280 feet, and the water was encountered at 2,239 feet. Encountering of water in this well makes the northwestern side look rather dubious at present, possibly threatening the defining of the limits of the pool in this direction.

This new area of Howard and Glasscock is now on proration, the wells allowed to produce but 40 per cent of their possible. Cosden, Shell and Humble have small gathering lines running into this new extension, taking oil from the various owners.

Pecos Wildcat Showing

The best wildcat showing of late in Pecos County was encountered this week in Cranfill & Reynolds, Anderson & Prichard, Monte Warner and others' No. 1 Masterson, located in the S cor. of Section 104, Block 10, H.&G.N. Survey, approximately 4 miles due south of Buena Vista. The first showing of oil was found at 1,249-50 feet, and while drilling at 1,277 feet it had a hole full of oil, flowing each time the bailer was run. The driller and owners figured that an additional pay was picked up between 1,249-77 feet. On November 10 it was bailed dry, but began filling a little while drilling at 1,304 feet in lime and sandy shale. There is but little gas showing with the oil.

The nearest test to this wildcat is the California Co.'s No. 1 Cordova Union Land Co., 3½ miles south in Section 10, Block 141, which was abandoned at 2,178 feet as dry. Farther south and east, Cowboy Evans drilled his No. 1 Byrne to 1,451 feet and abandoned it as dry. Three miles east the Humble Oil & Refining Co. drilled a test in the W cor. of Section 124, Block 10. H.&G.N. This test topped the salt at 835 feet, the lime at 1,775 feet, and was abandoned as dry at 2,015 feet. Elevation of this test was 2,437 feet.

Although the showing in this wildcat has not been exceptionally heavy there is a chance of it making a small producer and opening up another shallow area in Pecos County. The above-mentioned wells undoubtedly define the limits of the pool to the south and east, if there is a pool opened in this area, but there is still plenty of room to expand to the north, northeast and west.

Another interesting showing in Pecos County was encountered in the Jayhawk Oil Co.'s No. 1 Price, Section 6, Block 12, H.&G.N. Survey, about 3 miles northwest of the Rowan & Tong discovery well. This test had a slight showing of gas while drilling in lime at 1,425 feet, and the owners are watching for better showings of gas and showings of oil at a little greater depth.

Third Deep Well in Big Lake

The third deep well in the Big Lake Pool, Reagan County, came in this week, practically as dramatically as its two predecessors, Texon Oil & Land Co.'s No. 1-B University, and Big Lake Oil Co.'s No. 3-C University. This new well is 1,120 feet from the north and 1,096 feet from the east lines of Section 1, Block 2, and blew in unexpectedly at 8,220 feet. The tools were blown up the hole and stuck about 5 feet off bottom, the gas, estimated to be about 5,000,000 feet, increasing as time passed. A little oil was only sprayed at first, but this also accumulated to about 25 bbls. in the first two hours, and increased after that. The well was finally brought under control and shut in, and the owners are trying now to recover the tools. All of the deep tests in this field have come in as gassers, spraying a little oil, increasing in the oil flow each day. Big Lake Oil Co.'s No. 3-C University is still fishing for the line which was blown up in the hole when the well blew in on October 11. Gas has been one of the bothersome features of these tests, causing a considerable loss in both time and money when tools were blown up and lost in the holes, but the companies can stand to lose on fishing jobs when they bring in such wells as Texon's No. 1-B has proven itself.

The Milham Oil Co.'s No. 1 McDonald, an offset to the Rowan and Tong discovery well in Section 46, Block 11, H.& G.N. Survey, Pecos County, is another disappointment for this pool, as it was abandoned at the total depth of 1,651 feet this week. It is a west offset to the discovery.

Andrews County's Gas Show

Last week a good gas showing was encountered in Deep Rock Oil Co.'s No. 1 Ogden, located in the SW cor. SE, Section 6, Block A-46, Andrews County, and the well shut down at 2,925 feet after encountering an estimated 500,000 feet. The showings of gas in this area seem to have no significance, according to most geologists, for the showings are found near the base of the red beds about 1,000 feet above the lime, consequently cannot mean so very much. The Deep Rock Oil Co.'s No. 1 Harris is approximately 1½ miles southeast of No. 1 Ogden and had about twice as much gas as the latter, but it was later abandoned as dry. It struck the gas from 2,940-60 feet. This company's No. 1 Hostetter, 3 miles northwest of No. 1 Ogden, was also abandoned as dry, consequently the gas showings should not be considered too highly.

University Land Leases

Bids made and prices paid for University lands at this week's sale at Austin rather reflect the oil companies' sentiments, for it appears that University leases are not as appealing and desirable as they have been. No doubt the three-year leases, with one-sixth and one-eighth royalty clauses in them, have considerable to do with the low bids and lack of bids on University lands. On 10 tracts there were no bids received. On 26 tracts 15 companies and individuals bid, and on eight of these tracts bids were not accepted.

The following tracts were purchased from the Board of Regents of the University at Austin: The S half NE, Section 1, Block 35, Ector County; $56,800 was paid for this tract by the Cosden Oil Co., Inc. This company also purchased the S half NE, Section 1, Block 35, Crane County, paying $40,000. It also purchased the S half NE, Section 2, Block 35, Crane and Ector Counties, paying $56,800. These prices were far above bids made by other companies.

The Prairie Oil & Gas Co. paid $15,104 for the NW Section 12, Block 35, Crane and Ector County, and $9,840 for the SE Section 12, same block in Crane County. Snowden & McSweeney purchased the SE Section 13, Block 35, Crane County, paying $12,000 for it. In Hudspeth County, L. E. Lockhart purchased Sections 14 and 15 in Block A, for $480 each.

Upton County Operations

White Eagle Oil & Refining Co.'s No. 2 Hughes, located in the William Teer Survey, Upton County, which came in for an initial production of 1,930 bbls. about two weeks ago, has decreased to 130 bbls. daily, the oil cutting so badly that the Humble Pipe Line Co. has refused to run it. The company is now putting in a treating plant.

This week the Texas Pacific Coal & Oil Co. completed its No. 1 Shirk in the SE cor., Section 1, Block 3, M.K.&T. Survey, Upton County, for an initial productioin of 800 bbls. from a total depth of 2,426 feet. Top of the pay was encountered at 2,420 feet. This well is a three-quarters-mile northwest extension to the Wentz Pool, and will call for some offset wells to be drilled, thereby helping to resuscitate this old producing field, and possibly raising its daily average production considerably. This is one of the most important wells completed in this area for some time.

WEST TEXAS PRODUCTION
Week Ending November 9

County—	Wells	Bbls.
Crane County	321	36,850
Crockett County	44	2,230
Ector County	4	285
Fisher County	7	1,500
Glasscock-Howard	423	39,615
Jones County	73	2,715
Loving County	14	360
Mitchell County	142	2,430
Pecos County	356	137,835
Reagan County	253	17,350
Runnels County	3	14
Scurry County	5	22
Upton County	241	8,545
Ward County	14	1,825
Winkler County	595	109,715
Total this week	2,495	361,791
Total last week	2,477	364,104
Difference	18	2,313

WILDCAT OPERATIONS IN WEST TEXAS

Week Ending November 11

ANDREWS COUNTY

Company, farm and location—	Remarks—
Deep Rock's No. 1 Ogden, 2,310 ft. E, 330 ft. S, Sec. 6, Blk. A-46, Public School Land	Gas show 2,895-2,900 ft.; show oil 2,900-10 ft.; 2,000,000 ft. gas 2,910-25 ft.; drlg. 3,100 ft.

BORDEN COUNTY

Louisiana Oil & Ref. Co.'s No. 1 Miller, 1,320 ft. from W and 150 ft. from S line, Sec. 355, Blk. 97, H.&T.C.	Top lime 2,300 ft.; drlg. 3,580 ft.
Moncrief et al's No. 1 Munger, C of SW, Sec. 14, Blk. 31.	Shut down 2,425 ft.
Teas & Wheeler's No. 1 Long, 1,320 ft. N and E of Sec. 27, Blk. 30, T.&P. Sur.	Top salt 1,030 ft.; drlg. 3,715 ft.

BREWSTER COUNTY

E. W. Bateman et al's No. 2 Nevill, 2,000 ft. S and W line of Sec. 62, Blk. 13, G.H.&S.A.R.R. Sur.	Shut down 2,274 ft.
Brewster Oil Co.'s No. 1 fee, 2,640 ft. S and 2,598 ft. E of NW cor., Sec. 45, Blk. G-15, G.C.&S.F.	Shut down 1,935 ft.
Cowden & Bowser's No. 1-A Jackson & Harmon, Sec. 1, Blk. 331, T.C.R.R. Sur.	Set 8-in. 1,550 ft.; shut down 2,000 ft.
Forrest Oil Co.'s No. 1 Skinner, C SW SE, Sec. 100, Blk. 2, G.C.&S.F. Sur.	Shut down 805 ft.
Grastorf et al's No. 1 Redfield, 920 ft. from N and 2,500 ft. from E of Sec. 18, Blk. G-15, G.C.&S.F.R.R. Sur.	Machine.
J. M. Hickey's No. 1 Jackson & Harmon, NE cor., Sec. 182, Blk. 9, G.H.&S.A. Sur.	Shut down 2,000 ft.
Van McPhail's No. 1 McIntyre, SE cor. Sec. 59, Blk. 352, 7 mi. S of Alpine	Shut down 1,740 ft.

COKE COUNTY

Lipan Oil Co.'s No. 1 E. C. Rawlings, Sec. 390, Blk. 1-A, H.&T.C. Sur., elev. 2,750 ft.	Shut down 2,892 ft.
Mid-Kansas Oil Co.'s No. 1 W. E. Lackey, 330 ft. N and E of SW cor., Sec. 272, Blk. 1-A, H.&T.C.	Pay 3,755-56 ft.; 6⅝-in. casing set 3,451 ft.; underreaming at 4,058 ft.; shut down 4,139 ft.

CONCHO COUNTY

Duffy et al's No. 1 Callan, 1,520 ft. N and 1,120 ft. W of SE cor., Sec. 21, Blk. 10, H.&T.C.R.R.	Spudded and shut down.
Jones & Leiner's No. 1 Jones, 420 ft. S and 15 ft. E of NW cor. John G. Reh Sur. No. 1,878	Top lime 1,770 ft.; top pay 1,775-80 ft.; 18 ft. oil in hole; to test; shut down 2,375 ft.
T. B. Slick's No. 1 Mosely, 2,490 ft. from N and 150 ft. from W of Sec. 1,938, Bachinan Sur.	Location.
Turner et al's No. 1 Borsig, 150 ft. from S of SE cor. G. Emig Sur. 130, 6 mi. W of Paint Rock	Shut down 735 ft.

(Continued on Page 109)

WEST TEXAS COMPLETIONS

Week ending November 9

Crane County

Gulf Production Co.'s No. 67 McElroy, located 2,103 feet south and 2,640 feet west of NE cor., Section 201, Block F, C.C.S.D.&R.G.N.G.R.R. Survey, was drilled to a total depth of 2,965 feet, topped the pay at 2,803 feet and had an initial production of 345 bbls. Gulf Production Co.'s No. 2-B Hughes, topped the pay at 2,235 feet, was drilled to a total depth of 2,278 feet and had an initial production of 70 bbls.

Crockett County

Young & Donnelly's No. 1 Shannon (Middlebuster), located C Section 11, Block 9, D.&S.E. Survey, was dry and abandoned at 1,719 feet.

Glasscock County

Kirby Petroleum Co.'s No. 1 Baker, located 330 feet from north and west lines of Section 23, Block 33, Township 2-S, T.P.R.R. Survey, topped the pay at 2,090 feet, was drilled to a total depth of 2,285 feet and had an initial production of 45 bbls. hourly. Kirby Petroleum Corp.'s No. 1 Phillips, located 330 feet from north and west of Section 23,

(Continued on Page 115)

Wildcat Links Mills and Pandem Pools

New Pool on Western Side of Gray County Seems Assured by Latest Wildcat. Foard County Test Not Looking So Good

By L. E. Bredberg
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., Nov. 11.—Archer County claimed the stage this week in North Texas when a wildcat between the Mills Pool in Baylor County, and the Pandem Pool south of Megargel in Archer, practically assured the linking of these two pools by production. Gray County's latest wildcat is still shut in for storage, but it also has created much interest in the western side of that county, as a new pool is practically assured by this well.

Shell Petroleum Corp. and Fain & McGaha's No. 1 French, located 220 feet from the north and 660 feet from the east lines of the east 50 acres of the west 80 acres of the south 160 acres of Section 3, G.C.&S.F. Survey, Foard County, did not look so appealing this week when the oil sand found at 1,458-67 feet was tested and found dry. The test is now drilling below 1,775 feet with no further showings of oil. Last week this test looked as if it meant adding another producer to the Tarver Pool when it encountered the oil-bearing sand, but the test proved otherwise, and the company started deepening.

The latest find in Archer County was made by Duke, Porter and Oakes on the J. A. Young farm, 150 feet from the south and east lines of the E half NE, Section 2,406, T.E.&L. Survey. The well topped a sand at 1,413 feet and was shut down at 1,415 feet estimated good for 300 bbls. initial. Lying between the Mills Pool and Pandem Pool, it promises the linking of these two, and the opening of several square miles to new production. As soon as the well is tested and proven a producer offsets will undoubtedly be located at once.

Gray County Wells

Twelve miles southwest of the Finley-Brown Pool in Gray County, Dillard and others' No. 1 Furneax Brothers, located in the SE cor., Section 202, Block B-2, H.&G.N. Survey, encountered hard granite wash pay at around 3,070-75 feet and sprayed 5 bbls. of oil per day with 10,000,000 feet of gas, the gas coming from an upper lime. The well was shut down for storage, but was estimated good for about 25 bbls. a day from the present depth. The nearest production to this well is in a well drilled by the Empire Gas & Fuel Co. in Section 185, to the northwest. It was completed at a total depth of 3,364 feet, with an initial production of 25 bbls. per day. It is 4½ miles northwest of the Dillard discovery, which opens up a vast amount of new territory to exploitation, and the possibility of a new pool of large caliber.

The Sun Oil Co. completed a splendid producer this week in its No. 1 Purviance and others in the NW cor., Section 61, Block B-2, H.&G.N. Survey, Gray County. This well came in for an initial production of 1,700 bbls., completed at a total depth of 2,960 feet after topping the pay at 2,938-50 feet. The McMan Oil & Gas Co. drilled in its No. 3 Jackson, netting a 900-bbl. well at a total depth of 3,015 feet. Top of the pay was found at 3,006-15 feet. These were the only two wells completed in this county during the week, other operators and companies shutting down, and letting others stand on top of the pay, due to lack of pipe line facilities and storage, and complying with agreement reached by operators and companies at Pampa, October 29. The Texas Company was one of the major companies, operating in this area, which voluntarily cut its production and crude purchases 20 per cent, which in turn reduced the daily average pipe line runs of the Texas Pipe Line Co. from this county, and the Panhandle district. The daily average of the county dropped only 150 bbls. this week, while production of the Panhandle district dropped 1,122 bbls., from 102,309 bbls. to 101,187 bbls.

Coleman County Completions

In Coleman County, Ranger district, Jim McCamey's No. 2 Sealy-Smith, in Section 35, G.H.&H. Survey, was completed for a 25-bbl. well after a 30-quart shot in the sand at 2,125-35 feet. The well is making some water, but, due to this completion, other tests will no doubt be drilled on offset leases, immediately, for it is in strictly wildcat territory, opening up considerable area to production, although there is a defining dry hole on the west, and a gasser on the north.

One of the most interesting tests near the Eastland Pool in this county is the test being made by the Eastland Oil Co. on the Griffin farm, about 1 mile southwest of production in the pool. The test is now drilling below 1,100 feet, and another week should give a definite idea as to whether the pool will run farther southwest.

TEXAS PANHANDLE COMPLETIONS
Week Ending November 9

Gray County

McMan Oil & Gas Co.'s No. 3 Jackson topped the pay at 3,006-15 feet and had an initial production of 900 bbls. Sun Oil Co.'s No. 4 Purviance and others, located 330 feet south and east of the NW cor., Section 61, Block 2, H.&G.N. R.R. Survey, topped the pay at 2,938-50 feet, was drilled to a total depth of 2,960 feet and had an initial production of 1,700 bbls.

Carson County

Herragan Oil Co.'s No. 1 McConnell, 330 ft. north and west, W half SW, Section 187, Block 3, I.&G.N.R.R. Survey, was dry and abandoned at 2,925 feet. Ryan-Continental Oil Co.'s No. 5 Block, located 330 feet north and west of the SE cor. NE, Section 111, Block 4, I.&G.N.R.R. Survey, topped the pay at 3,027-88 feet, was drilled to a total depth of 3,094 feet, was shot with 340 quarts at 3,014-94 feet, and had an initial production of 300 bbls.

Hutchinson County

Midwest Exploration Co.'s No. 1 Garner and others, located 300 feet north and west of SE cor. NE, Section 124, Block 4, I.&G.N.R.R. Survey, topped the pay at 3,098-3,106 feet, was shot with 260 quarts at 3,052-3,121 feet and had an initial production of 225 bbls. Midwest Exploration Co.'s No. 2 Garner, located 330 feet north and 1,650 feet west of SE cor. NE, Section 124, Block 4, I. &G.N.R.R. Survey, was drilled to a total depth of 3,108 feet, topped the pay at 3,045-3,103 feet, was shot with 270 quarts at 3,103 feet and had an initial production of 240 bbls. Prairie Oil & Gas Co.'s No. 4 Cal Merchants, located 5,612 feet south and 300 feet east of the NW, Section 37, Block 47, H.&T. C. Survey, topped the pay at 2,759 feet, was drilled to a total depth of 2,766 feet, an had an initial production of 100 bbls.

NORTH TEXAS PRODUCTION
Week ending November 9

Panhandle District—	Prod.
Carson County	9,465
Hutchinson County	26,855
Gray County	63,330
Moore County	780
Potter County	49
Wheeler County	708
Total this week	101,187
Total last week	102,309
Decrease	1,122

Wichita District—	
Archer County	18,045
Baylor County	70
Clay County	874
Cooke County	10,125
Foard County	210
Jack County	3,700
Haskell County	90
Montague County	6,230
Throckmorton County	627
Wilbarger County	30,563
Young County	6,434
Wichita County	25,220
Total this week	102,188
Total last week	102,360
Decrease	172

WILDCAT OPERATIONS IN TEXAS PANHANDLE

Week Ending November 11

CARSON COUNTY

Company, well, farm, name, section and block—	Remarks—
Continental Oil Co.'s No. 2 Block, 990 ft. from N, 330 ft. from E, SE, Sec. 111, Blk. 4, I.&G.N.R.R. Sur.	Location.
Danciger O. & R. Co.'s No. 1 Block, 330 ft. from N and E lines, Sec. 112, Blk. 4, I.&G.N. Sur.	S.D. 2,851 ft.
Delmar Oil Co.'s No. 5 Noel, 330 ft. S and W, NE cor. W½ SE, Sec. 198, Blk. 3, I.&G.N. Sur.	S.G. 3,000-10 ft; S.D. 3,131 ft.
Empire G. & F. Co.'s No. 1 Fields, 1,650 ft. from N and E, Sec. 13, Blk. 7, I.&G.N. Sur.	Shut down.
Empire G. & F. Co.'s No. 2 Deahl, 660 ft. N and E, SW, Sec. 3, Blk. 5, B.&B. Sur.	S.D. 1,414 ft.
Empire G. & F. Co.'s No. 1 Thorp, C NW, Sec. 26, Blk. T, A.B.&M. Sur.	Location.
Ham Oil Co.'s No. 1 Cooper, 330 ft. from S and W, E½ NE, Sec. 5, Blk. 9, H.&G.N.R.R. Sur.	Drlg. 285 ft.
Herragan Oil Co.'s No. 1-A McConnell, 330 ft. from N and W, W½ SW, Sec. 187, Blk. 3, I.&G.N.R.R. Sur.	Location.
S. D. McElroy's No. 1 Block, 330 ft. from N and E, NE NW, Sec. 112, Blk. 4, I.&G.N.R.R. Sur.	Rigging up.
McMan O. & G. Co.'s No. 1 McConnell, 330 ft. from N and E of E½ SW, Sec. 187, Blk. 3, I.&G.N.R.R. Sur.	Bldg. rig.
Osborne et als' No. 3 Percival, 330 ft. N and W, SE cor. E½ NE, Sec. 199, Blk. 3, I.&G.N.R.R. Sur.	Location.
Pansota Oil Co.'s No. 1 Block, 330 ft. S and W, NE cor. SW, Sec. 111, Blk. 4, I.&G.N.R.R. Sur.	Cellar.
Phillips Pet. Co.'s No. 1 Garner, 330 ft. N and E, SW cor. SW, Sec. 114, Blk. 4, I.&G.N. Sur.	Fishing 2,940 ft.
Prairie O. & G. Co.'s No. 2 Nail, 330 ft. from N and W lines, N½ E½ SE, Sec. 198, Blk. 3, I.&G.N. Sur.	10,000,000 ft. gas 2,830-2,985 ft; S.D. 3,112 ft.
Red River Gas Co.'s No. 3 Lee Bivins-A, C SE SE, Sec. 43, Blk. M-20, G.&M.R.R. Sur.	S.D. 550 ft.
Reynolds et als' No. 2 Cooper, 330 ft. from S and W lines, E½ NW, Sec. 5, Blk. 9, I.&G.N. Sur.	Drlg. 3,010 ft.
Ryan Cons. Oil Co.'s No. 6 Block, 330 ft. S, 990 ft. E, NW NE, Sec. 111, Blk. 4, I.&G.N. Sur.	S.D. 2,886 ft.
Shell Pet. Corp.'s No. 1 Percival, 330 ft. from N and E, SE, Sec. 199, Blk. 3, I.&G.N. Sur.	Rig.
Skelly Oil Co.'s No. 19 Schafer, 330 ft. N, 990 ft. E, SW cor. NE, Sec. 198, Blk. 3, I.&G.N. Sur.	6,000,000 ft. gas 2,895-2,970 ft; S.D. 3,100 ft.
Skelly Oil Co.'s No. 20 Schafer, 330 ft. N, 990 ft. W, SE cor. N½, Sec. 198, Blk. 3, I.&G.N. Sur.	S.D. 3,090 ft.
Skelly Oil Co.'s No. 21 Schafer, 340 ft. N, 1,540 ft. W, SE cor. SE, Sec. 68, Blk. 4, I.&G.N.R.R. Sur.	Location.
Stubblefield et als' No. 1 Garner, 330 ft. from S and E lines, SE, Sec. 104, Blk. 4	T.P. 2,990-3,024 ft; I.P. 25 bbls.; T.D. 3,080 ft; shot 80 qts. from 3,000-70 ft; C.O.
The Texas Co.'s No. 4 Lewis, 330 ft. N and E, SW cor. NW NE, Sec. 115, Blk. 4, I.&G.N.R.R. Sur.	Drlg. 3,025 ft.
The Texas Corp.'s No. 2 Noel, 990 ft. from S, 330 ft. W, NW, Sec. 187, Blk. B-3, I.&G.N. Sur.	T.P. 3,160-65 ft. and 3,212-70 ft; T.D. 3,291 ft; I.P. 120 bbls.
The Texas Co.'s No. 3 Noel, 330 ft. N and W, SE cor. NW, Sec. 187, Blk. 3, I.&G.N.R.R. Sur.	Location.
The Texas Co.'s No. 3 Quinn, 330 ft. N, 990 ft. E, SW cor. E½, Sec. 7, Blk. 9, I.&G.N.R.R. Sur.	Bldg. rig.

CASTRO COUNTY

Colorado O. & R. Co.'s No. 1 M. Siemmons, SW cor., Sec. 73, Blk. M-17, B.S.&F. Sur.	Rig blown down.

(Continued on Page 112)

TWO MORE TESTS IN VAN ZANDT AREA; PLAN FOR UNIT OPERATION UNDER WAY

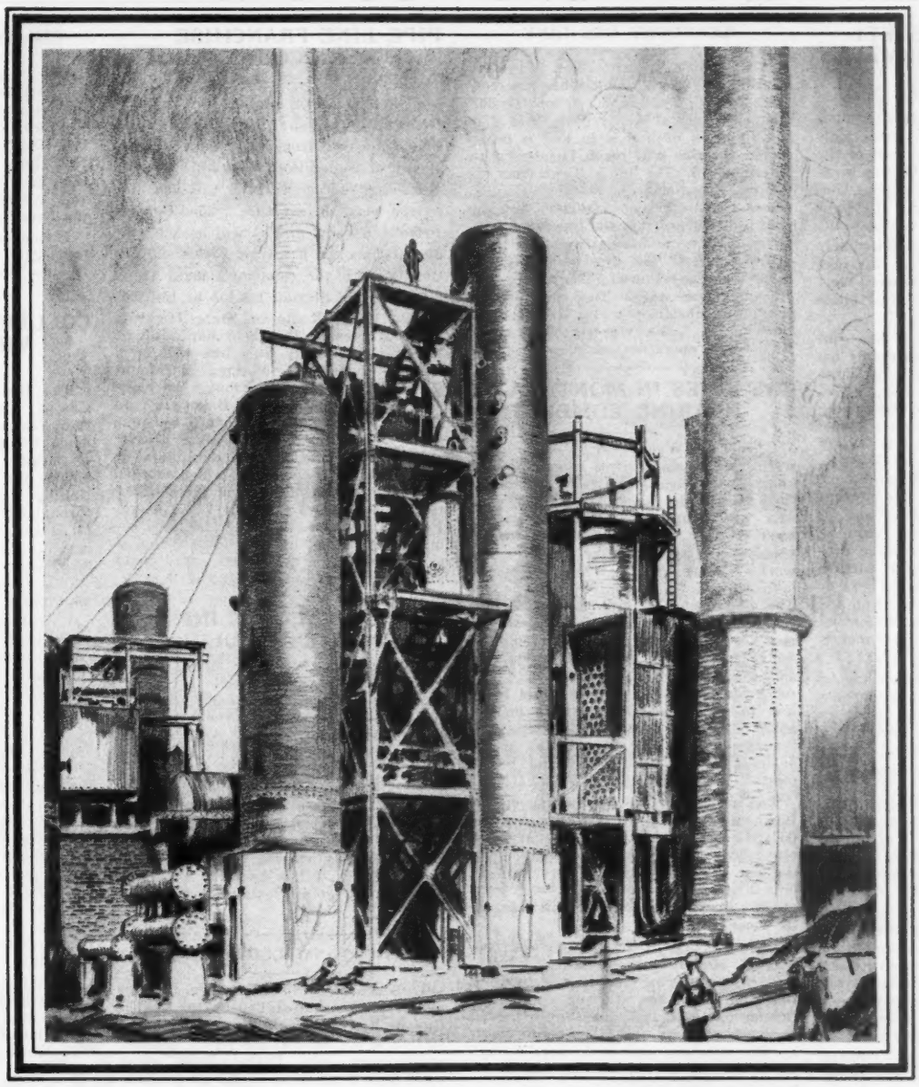
By L. E. Bredberg

FORT WORTH, Tex., No. 11.—Van Zandt County, the county holding the center of interest in East Central Texas, has been practically assured of two more tests to be drilled soon. One of them is only a tentative location at present, but will probably be moved in on and drilling commenced in the near future. Three offsets to the Pure Oil Co.'s No. 1 Jarmon, the discovery well, were announced last week, two belonging to the Shell Petroleum Corp. and one by the Pure Oil Co., this company to do the drilling of all three wells, as per a unit plan of development which is in process of construction and completion. Definite word as to the ratification of the plan has not been made public yet, but only two companies were holding up the details last week, these companies delaying ratification because they did not have headquarters within the State, and the plans had to be submitted to their headquarters before anything could be done locally.

If the plan goes through the Pure Oil Co. will carry on all development work under a committee composed of one man from each company owning offset acreage. As the innumerable small tracts held by the various companies are under rather short time leases, many wells will have to be drilled in about a year's time, and the most practical method would no doubt be to conduct the drilling of the leases under the unit plan. It seems as if this would be the most helpful to all and the least wasteful of oil and natural gas. But under this plan each company participating would be privileged to provide its own outlet and transportation.

Companies owning nearby acreage are the Shell Petroleum Corp., Humble Oil & Refining Co., Sun Oil Co., The Texas Company, Pure Oil Co. and Gulf Production Co.

(Continued on Page 76)



Initial runs REVEAL THE REAL VALUE IN THE KELLOGG PLAN *of* CONSTRUCTION

Many large refiners rely on Kellogg for the complete service of plant design, construction and initial operation. This Kellogg plan provides full flexibility to meet unusual conditions, and through undivided responsibility, safeguards the ultimate operating success of a refinery.

The M. W. KELLOGG COMPANY

225 Broadway, New York

HOUSTON, TEXAS, 1514 PETROLEUM BLDG. LOS ANGELES, CAL., 1031 SO. BROADWAY TULSA, OKLA., PHILTOWER BLDG

Pipe Line Construction News

CONSUMPTION OF STEEL PROCEEDS AS FORMERLY

By B. E. V. Luty

PITTSBURGH, Pa., Nov. 11.—Scarcely any change in the steel market is observed that can be traced to the break in the stock market. Consumption of steel proceeds as formerly and as consumers were not carrying any stocks of steel they require deliveries just the same.

Trade in general has been particularly active since before the middle of this year and as noted in previous reports steel production has been on a special bulge since the middle of last year.

The rate of steel production has continued to decline and is considerably below the 80 per cent of two and three weeks ago though it is doubtless above 75 per cent. This recession was more or less foreshadowed by lighter steel buying for several weeks and is merely a continuance of the gradual decrease that began in June, the peak rate of all time having been in May. The unusual feature this year was that there was no autumn increase. The present rate is approximately equal to the average rate of the past four years. Some further decrease is to be expected to the end of the year, say to a 70 per cent rate. Invariably in ordinary times production begins mounting immediately after January 1, and quite sharply.

Rail production has been increasing in the past couple of weeks and will increase further, somewhat earlier than usual as some of the railroads have made their annual purchases one to two months earlier than last year. Close to 1,000,000 tons of rails have been bought thus far on the movement, some roads taking more and some less than one year or two years ago, but the general total shows only an insignificant decrease. Roads which generally buy between two-thirds and three-fourths of 1,000,000 tons are still to be heard from.

About 20,000 freight cars have been bought in the past month, representing about two months of work at the rate car shops have been producing since last May. A couple of months ago the shops were on the verge of running out of orders. Additional car buying is expected.

Fabricated structural steel lettings since September 1 have been at a fairly high rate, about equal to the average before the bulge which began early this year.

Finished steel prices are not holding absolutely but they are doing well in the circumstances, there being very few outright declines since the edge began coming off the market a few months ago, and none of particular importance. At the same time buyers are on the lookout for possible breaks. Galvanized sheets declined several months ago to a range of 3.50 cents to 3.60 cents and now they are quotable at 3.40 cents to 3.50 cents. Recently automobile sheets declined from 4.10 cents to 4.00 cents and mills have abandoned the hope that they could get the market back to 4.10 cents. Bars, shapes and plates are easy at 1.90 cents.

Pipe mill operations have slipped a trifle and are now at not over about 65 per cent. The usual seasonal decline in demand for standard pipe has begun. Prices are reported firm. Seamless tube mills are running at about 65 per cent.

INTERSTATE GAS LINE

BOLIVAR, N. Y., Nov. 9.—Pipe is being shipped to the Empire Gas Co. to be used in laying a gas line from Sharon Center in Potter County, Pennsylvania, to Canada Hollow, near Millport, in Chemung County, New York.

KENTUCKY GAS LINE

HENDERSON, Ky., Nov. 11.—The Central Gas Corp., which has the contract for supplying the city of Henderson with natural gas, reports that 3 of the 15 miles of line is in and it is expected the line will reach Henderson by November 15. The line will run from the Sebree gas field in Webster County, where it is said that 5,000,000 feet can readily be turned into the line when completed and two additional wells are being drilled for gas. The present supply will come from the Powell, Thornberry and Rideout farm wells. The gas corporation is a subsidiary of A. Greenspon & Sons of St. Louis, represented by Jesse K. Bishop, operation manager.

GAS LINES IN MONTANA NEARING COMPLETION

CASPER, Wyo., Nov. 9.—The past week was a stormy one over Montana and caused considerable shut down in the field work under way. Most of the wildcats are shut down pending warmer weather and the thawing of the water supply lines. In Glasgow, however, the work of laying the gas lines there has been carried on in spite of the storm. The whole south side of the city is now completed and the pipe line and service men are waiting for some cars of pipe to arrive to start on the business section and the north residential district. The south side mains as well as those to be laid in the residential districts on the north side will be all 4-inch pipe, but the supply mains and the mains in the business district will be 8 and 6-inch pipe.

Two wells have started drilling on the Bowdoin Dome to furnish gas for the Glasgow system and these are expected to be ready to turn into the line about the last of November. The survey of the pipe line has been completed and work on this part of the project will start in the near future.

The Four Range Gas Co., a local concern of Montana, has obtained a franchise for supplying gas to the town of Bozeman and is now starting a well near Helena to obtain the gas supply needed to supply the city and other points nearby. The company expects to have enough gas to supply Butte, Helena and Bozeman from their operations.

Perkins & Jones, the same firm that is laying mains in Glasgow for gas, are busy laying lines in Malta for the same purpose. The Montana-Dakota Utilities Co. has completed laying its mains in Malta against the orders of the town council and without a franchise. The town brought suit to eject the Montana-Dakota and the case is now in the courts.

The new gas line between Conrad and Choteau was finished last week and the gas turned in. This gives Choteau a gas supply for its citizens.

SULLIVAN SWITCH LINE

SAN ANTONIO, Tex., Nov. 11.—Construction work started late in October on the 39 miles of 6-inch pipe line for the Texas Pipe Line Co. from Sullivan Switch on the Southern Pacific west of Luling to Rosanky in Bastrop County 39 miles north to a connection with the company's main line from West Texas. N. A. Saigh of San Antonio, who has the contract to build the line, is to have it completed by November 20. Construction work was started from three points on the line. The Texas Company has production at Darst Creek, 10 miles south of Sullivan Switch, and a line from Darst Creek to Sullivan Switch, and has been shipping about 1,400 bbls. daily from two wells, shipments being by tank car.

PIPE LINE FRANCHISE IN KERN COUNTY FIELDS

LOS ANGELES, Calif., Nov. 9.—The General Petroleum has secured a pipe line franchise from the Kern County Board of Supervisors and will probably start construction work on this new line in the very near future. The General Petroleum's new project will hook up the Mount Poso and Fruitvale Fields of Kern County with the company's main trunk at Grapevine Station located at the foot of the Ridge Route or State Highway which traverses the Tehachapi Range. This new auxiliary pipe line will be a 10-inch welded job starting at Mount Poso and run directly through the western part of the city of Bakersfield to the Fruitvale Field and thence continue southward through the Panama district south of Bakersfield and terminate at the company's main trunk, which extends from the Lost Hills Field of Kern County to Los Angeles Harbor. The General Petroleum's new line will be approximately 24 miles in length and have a rated capacity of 18,000 bbls. daily under an operating pressure of 600 pounds.

TURNER VALLEY LINE TO BRITISH COLUMBIA?

CHATHAM, Ontario, Nov. 9.—As an alternative to the proposed 500-mile pipe line to Winnipeg and intervening points to handle the surplus gas of the Turner Valley Field, a pipe line to cross the Rocky Mountains through the Crow's Nest pass and serve western markets in British Columbia is being mooted. A large market for industrial gas could be found at Trail, B. C., where smelting operations are extensively carried on; while Vancouver, B. C., offers as large a market as Winnipeg at approximately the same distance.

BUTTONWILLOW LINE

LOS ANGELES, Calif., Nov. 9.—Gas meters are being installed by the Pacific Gas & Electric Co. along the complete section of the natural gas pipe line under construction into Buttonwillow where eight capped gas wells of the Milham Exploration Co. will be tapped.

Most of the pipe is already laid out and sections are being welded together. The line from Kettleman Hills into Buttonwillow will be in operation in a few days and gas from Milham's gassers will be turned into it.

VAN ZANDT COUNTY LINE

The Pure Oil Co. will have its 10-inch line to Chandler, Tex., and loading rack at that point, completed in about a week, ready to run oil from its No. 1 Jarmon, the discovery well which is averaging 265 bbls. of oil daily through a half-inch choke with 50 pounds back pressure. As soon as this 10-inch line is completed oil will be loaded out from the tank rack to the company's refinery at Smith's Bluff.

QUINTON GAS FIELD

A proposed new pipe line may be built from the Quinton gas field in Township 10-19, Pittsburg County, to Henryetta, in Okmulgee County, Oklahoma. It is expected the new gas line will serve the new industries under construction at Henryetta. Another proposed gas line from the Quinton gas field to points north and east is reported. Some predict the new gas line will connect the gas field with Joplin, Mo.

TO LAY KENTUCKY LINE

The Missouri-Kansas Pipe Line Co. has purchased a franchise to construct a pipe line through Henderson County, Kentucky. The line will extend 12 miles from the Niagara gas field north towards Henderson. The contract has been let to the J. J. Connor & Son Construction Co. and is expected to stimulate drilling in the Niagara Field.

Henderson is about 30 miles west of Owensboro, Henderson County, adjoining Daviess County on the west.

COLUMBIA GAS PLANS VIRGINIA EXTENSIONS

The Board of Directors of Columbia Gas & Electric Corp. have announced that the management has been giving much thought and study to the subject of largely expanding the gas markets and is now planning, in addition to continuing its active development plans throughout its present large territory, to make natural gas available directly, or as an enriching element to the gas distribution companies serving many cities which have not heretofore had the advantages of natural gas.

United Fuel Gas Co., subsidiary of Columbia Gas & Electric Corp., is seeking franchises to pipe natural gas from Kentucky into Virginia cities. Extension of system to cost approximately $32,000 a mile.

"For more than 30 years the gas production and reserves of Columbia System have been built up through continued investigation and survey in the Appalachian gas reserves by the mose experienced operators, assisted by independent engineers as well as their own. It is the purpose to continue this policy in the Appalachian fields, the limits of which have been extended every year during the above experience and it is the opinion of experts in the business that these extensions will continue for years to come."

At the special meeting of the shareholders held in Wilmington, the increase of the authorized common stock without par value of the corporation from 10,000,000 shares of 30,000,000 shares, was approved.

ODORIZER IN GAS LINE

Adding to all precautions necessary to insure safety, an "odorizer," which will make it possible to detect leaks of natural gas, is being used by the Pacific Gas & Electric Co. in Fresno, Calif.

"This odorant has been going into the mains since Kettleman Hills natural gas was first turned on in Fresno," said Superintendent O. L. Dickinson. "It has a distinctive and easily recognizable odor, something like that of an oil refinery, and is intended as a safety measure to detect leaks or broken connections."

The odorant gives natural gas, which is otherwise odorless and for that reason dangerous in case of leaks, an easily detectable smell.

MISSOURI-KANSAS GAS SALES

Missouri-Kansas Pipe Line Co., through its president, Frank P. Parish, reports natural gas sales for the month of October of 400,000,000 feet, a record for the organization and a 200 per cent increase over the same month in 1928. The American Pipe Line Co., a subsidiary of Cities Service, was the largest user of Missouri-Kansas gas in October, the latter organization delivering 185,000,000 feet to the American Pipe Line at Kansas City.

4 REVOLUTIONS

overturning

WITH ONE CRANK

Pat. Applied For

The New

K.M.CO. SPECIAL TAPER-HOLE CRANK *with* KEYED-QUICK-CHANGE TAPERED WRIST PIN

Four long-reigning bugaboos are overturned by the new KM CO Crank. This equipment enables the operator to make a quick and easy change of the wrist pin in the crank holes, according to the length of stroke desired in varying drilling and pumping conditions. Time and Trouble are eliminated and Drilling and Pumping Costs are reduced by this crank's revolutionary features.

No Nut Or Threaded End

To change the Wrist Pin from one Crank Hole to another it is necessary only to tap lightly on the key that holds the Wrist Pin in place and the Wrist Pin can then be easily removed from the Tapered Crank Hole. No nut or threaded end is necessary to hold the tapered wrist pin in position, as it is drawn tight in the Tapered Crank Hole by a light blow on the Key, which makes a metal-to-metal contact. The Key is driven into a groove in the Crank, which prevents the turning of the Wrist Pin, thus eliminating any wear in the Crank Hole or the surface of the Wrist Pin and insuring a perfect contact and tight fit at all times. This equipment is furnished assembled on 6″ A.P.I. Standard Shaft, and can be ordered now through Kirk-Morrow Warehouses and Sales Offices.

THE KIRK MORROW IRON WORKS IOLA KANS. KMCO

PRODUCTS

Steel Tankage, Tank Fittings, Refinery Equipment, Steel Plate Construction, Steel Derricks, Rig Irons, Bull Wheels, Calf Wheels, Band Wheels, Crown Blocks, Tug Wheels, Sand Reels.

THE KIRK-MORROW IRON WORKS COMPANY

Sales Offices: Hunt Bldg., Tulsa, Oklahoma; Magnolia Bldg., Dallas, Texas; Central Bldg., Wichita, Kansas.

OKLAHOMA FIELDS

(Continued from Page 50)

the area is expected to increase from the amount of new drilling activities. However, with proration in effect it will slow down new production. When tests reach the sand they are shut down nine days before being completed.

Two new semiwildcat tests are getting started in Township 8-5, Seminole County. Gypsy Oil Co.'s No. 1 Brunner, NE cor. SE NW, Section 23-8-5, is a cellar. Continental Oil Co.'s No. 1 Harjo, NW cor. SE, Section 26-8-5, is rigging up. Both of these tests are community wells and if they find production will prove up a large amount of undeveloped territory.

Indian Territory Illuminating Oil Co.'s No. 1 Philpot, NW cor., Section 4-5-5, Pontotoc County, is an interesting wildcat and is reported to be running high on structure. Many express an opinion that it may find production in the Wilcox sand horizon. It had sulphur water in the Simpson at 2,977-3,085 feet. Some other tests that have had water in the Simpson also had water in the deeper formations.

E. L. Harris and others' No. 1 Harjoche, SE cor. NE SE, Section 8-6-6, Seminole County, has been plugged back from the Wilcox sand at 4,047-52 feet, where it had a hole full of water, to the Cromwell sand at 2,860 feet. The casing has been ripped and the hole filled up with oil 1,800 feet in six hours. It is estimated to be a 200-bbl. well at this depth.

The daily average production of the Greater Seminole area for the week ending November 6 was as follows:

Pool—	Wells	Bbls.
Little River	347	46,322
East Little River	38	22,842
Carr City	58	9,050
Maud	135	19,463
Mission	110	16,756
Bowlegs	296	24,832
Earlsboro	295	35,119
East Earlsboro	46	27,042
Seminole	274	25,951
East Seminole	28	5,061
Searight	83	10,481
St. Louis	430	50,270
Asher	23	5,201
Sasakwa	29	10,911
Allen	230	20,250
Total	2,422	322,573

Southern Fields

In southern Oklahoma a new leasing campaign is in progress in Townships 3s-4w, 3s-5w, 3s-6w, 3s-7w, in Stephens and Jefferson Counties. Several major oil companies are checkerboarding in this area.

A new block of leases has been taken east of Sayre, in Township 10-22w, Beckham County. A wildcat test may be started on this block after it has been core drilled and a structure located. Another block is being assembled in Township 11-23w, Beckham County, consisting of about 20,000 acres.

The Altus Development Co.'s No. 1 in the NE cor. Section 4-1-20w, Jackson County, is expected to start up in a short time. The test is now shut down at 2,020 feet. Kay & Martin's No. 1 Martin, in Section 32-8-24w, Beckham County, had a showing of oil at 1,986-90 feet, is now bailing the water, which had almost exhausted itself, only a small amount showing at this time. It may be deepened in hopes of finding another pay horizon. Indian Territory Illuminating Oil Co.'s No. 1 fee, in Section 17-6-24, Greer County, has landed the 10-inch casing at 1,623 feet, and was fishing for tools at 1,650 feet. Helmerich & Payne's No. 1 in Section 23-6-24w, Greer County, was drilling at 2,100 feet in granite wash. The test is proceeding slowly on account of the fact it is difficult to keep a straight hole in this formation.

Exploring Deep Horizons

Superior Oil Co.'s No. 1 Nesmith, SW cor. SE SE Section 2-7s-7w, Jefferson County, has been abandoned at 3,914 feet in shale. It is the second test that has been drilled dry on core drilled structures in this area. The other test was the Wirt Franklin Petroleum Corp.'s No. 1 Sanders, SE cor. SE NW Section 10-4s-8w, Jefferson County, which was abandoned at 3,007 feet, in broken lime. Carter Oil Co.'s No. 6 Carter-Kearns, SW cor. NE SE Section 21-3-5w, Grady County, was drilling at 5,105 feet, in black shale. Magnolia Petroleum Corp.'s No. 2 Caddo-Rowe, NE cor. SW NE Section 36-6-10, Caddo County, an old well drilled deeper from 1,880 feet, made 860 bbls. from a new producing horizon at 3,269-85 feet.

Red Bank Oil Co.'s No. 1 fee, SE cor. SW Section 23-9-24, Le Flore County, eastern Oklahoma, found a second gas sand at 5,400 feet. It blew in making what was estimated to be 15,000,000 feet of gas. The tools were blown up the hole and the gas caught fire, which destroyed the rig and two of the crew were burned. It is the second gas sand encountered in the test. The first was found at 5,005-30 feet, with 2,000,000 feet of gas.

In Western Fields

In the northwestern part of the State the wildcat tests are proceeding slowly. The deepest test is Sinclair Oil & Gas Co.'s No. 1 Howell, C SW, Section 14-26-24w, Harper County. It was drilling at 6,070 feet in shale. This test is being closely watched as it is now in the formations that were expected to produce. No showing of oil has been encountered. Bu-Vi-Bar Petroleum Corp.'s No. 1 fee, SE cor. SW, Section 10-25-15w, Woods County, was drilling at 5,970 feet, in lime carrying a hole full of water. Top of the Mississippi lime is believed to be at 5,937 feet. Prairie Oil & Gas Co.'s No. 1 Wilber, NE cor., Section 23-23-17w, Woodward County, was drilling at 5,750 feet, in shale carrying a hole full of water. Harris & Haun's No. 1 Wyatt, C SE, Section 9-23-20w, Woodward County, was drilling at 4,885 feet in shale. Sinclair Oil & Gas Co.'s No. 1 Stewart, C NE SW, Section 33-27-16w, Woods County, was drilling at 5,350 feet. Peerless Oil & Gas Co.'s No. 1 Crowell, C NW NE, Section 23-28-16w, Woods County, was drilling at 900 feet, in a new hole. Drillers report the same conditions in this hole as they found in the original test which caved so badly it was necessary to skid to a new location.

Seminole Pipe Line Runs

The average daily pipe line runs from the Seminole area were on a par with the previous week. These runs are expected to hold steady while this area is under proration. The runs by companies for the week ending November 6, were as follows:

Company—	Bbls.
Barnsdall	3,396
Champlin	4,689
Continental	294
Consolidated	724
Cosden	10,723
Empire	4,947
Gulf	28,604
Magnolia	12,323
Oklahoma	40,720
Prairie	39,063
Producers & Refiners	699
Pure	3,942
Shaffer	3,213
Shell	6,281
Sinclair	25,571
Texas	17,605
Tidal	17,945
White Oak	2,716
Total	223,445
Tank cars	9,303
Grand total	232,758

Caddo County

Clyde Kahl is building the rig for No. 1 McKenna, SW cor. NE NW Section 31-6-9w.

Carter County

Magnolia Petroleum Co.'s No. 2 Putman, NE cor. SW Section 30-1s-3w, an old well, is cleaning out at 2,805 feet to deepen. Ven Mex Oil Co.'s No. 3 Eason, NW cor. NE SE Section 19-1s-3w, has been completed for 65 bbls. in sands 2,746-3,152 feet. Magnolia Petroleum Co.'s No. 1 Martin, SW cor. Section 21-2s-4w, has been abandoned at 4,623 feet.

Creek County

Magnolia Petroleum Co.'s No. 1 Ven Vance, NE cor. NW NE Section 7-18-7, is drilling deeper at 2,574 feet. J. W. Merritt and others moved a machine in for No. 2 Brown, NE cor. SW NE Section 27-18-8. Iron Mountain Oil Co. staked location for No. 1 Bruner, NE cor. SE SE Section 29-18-11. Tidal Oil Co.'s No. 3 Fife, CWL E half NW Section 22-17-7, is an old well drilling deeper at 2,833 feet. The Prairie Oil & Gas Co. made location for No. 1 Bruce, NE cor. SE NW Section 10-17-9. Iron Mountain Oil Co. made location for No. 1 John, SE cor. Section 4-17-10. O. M. Irelan and others' rig is up for No. 1 McNac, SW cor. NE Section 10-17-10. The Texas Company's No. 5 Baker, CEL SE SE Section 14-17-19, is rigging up. Emerson, Berry and McCoy's No. 1 Brown, NW cor. NE Section 20-17-10, is rigging up. The Texas Company's No. 1 James, NE cor. NW Section 20-17-10, is rigging up. Paraffine Oil Co.'s No. 8 Ross, SE cor. NW NE Section 34-16-11, is drilling at 1,005 feet. Empire Oil & Refining Co. moved the rig in for No. 3 Bigpond, SW cor. NW NW Section 36-15-7. C. G. Tibbens' No. 4 Connessenny, SW cor. NW SE Section 30-15-9, is drilling deeper from 3,030 feet.

H. U. Bartlett's No. 1-A Hutton, SE cor. NE Section 17-19-9, has been abandoned at 2,430 feet. No. 1 Jackson, SW cor. SE SW Section 23-18-8, has been completed for 1,000,000 feet of gas in sand 2,521-34 feet. Skelly Oil Co. and others' No. 1 Walker, NE cor. NW SE Section 23-17-8, is dry and abandoned at 3,640 feet. Texas Pacific Coal & Oil Co.'s No. 1 Harjoche, SE cor. NE Section 21-17-9, made 10 bbls. in sand 2,430-84 feet. Sunray Oil Co. and Buckles' No. 1-A McIntosh, NE cor. NW Section 30-17-9, has been abandoned at 3,365 feet. The Texas Company's No. 4 Baker, CEL NE SE Section 14-17-10, made 35 bbls. in sand 1,883-1,923 feet. Producers & Refiners Corp.'s No. 1 Elmore, SW cor. NW NW, Section 10-19-7, has been abandoned at 3,195 feet. Hancock & Foster and others' No. 1-A Wildcat, NE cor. SE NW Section 14-17-11, is a dry hole at 1,643 feet. H. W. Lampton's No. 1-A Webb, NE cor. SW Section 24-17-11, has been abandoned at 2,475 feet.

Texas Pacific Coal & Oil Co.'s No. 10 Beaver, NW cor. Section 17-16-9, has been completed for 40 bbls. in Dutcher sand 2,965-89 feet. Summitt Drilling Co. and others' No. 2 Long, NE cor. SW SE Section 25-16-11, made 25 bbls. in Glenn sand 1,710-66 feet. Paraffine Oil Co.'s No. 6 Ross, NW cor. SE NE Section 34-16-11, made a 10-bbl. well in sand 1,685-1,727 feet. No. 7 Ross, NE cor. SW NE Section 34-16-11, was completed for 7 bbls. in sand 1,906-39 feet. C. G. Tibbens' No. 6 Connessenny, SE cor. NE SW Section 30-15-9, made 200 bbls. in Wilcox sand 3,563-3,602 feet after being deepened. Troy Oil Co.'s No. 12 Grayson, C NW NE, Section 2-15-11, has been completed for 60 bbls. in sand 1,806-26 feet. Whitefield Oil Co.'s No. 4 Grayson, NE cor. SE NW SW Section 3-15-11, made 20 bbls. in Taneha sand 2,240-56 feet. The Prairie Oil & Gas Co.'s No. 3 Roberts, SE cor. Section 7-16-9, has been deepened to Dutcher sand 2,968-85 feet and completed for 190 bbls.

Cotton County

Baldwin & Sultan made location for No. 6 Rhone, SE cor. Section 35-1s-10w. Wirt Franklin Petroleum Corp.'s No. 4 Chambers, CSL SW SE, Section 35-1s-10w, has cemented pipe at 2,143 feet, total depth 2,156 feet. Shasta Oil Co. made location for No. 10 Slogan, NW cor. NE Section 2-2s-10w. No. 9 Slogan, C NW NE Section 2-2s-10w, is rigging up. Location has been made for No. 1 Smith, NE cor. SW Section 31-1s-9w.

Hughes County

Independent Oil & Gas Co.'s No. 1 Walker, C SW NW, Section 12-7-8, has been completed for 40,000,000 feet of gas in sand 2,882-97 feet.

Kay County

Parrish and others' No. 5 Whitesides, SE cor. NE SW Section 25-28-1w, is spudding. De Camp and others' No. 1 Van Valkenberg, C NE SE Section 25-28-1w, has been completed for 500,000 feet of gas in sands 925-30 feet and 960-65 feet. Parrish and others' No. 1 Balzer, SE cor. SW SW NE Section 3-27-2, has been abandoned at 640 feet.

Kiowa County

George Eshelman's No. 1 Dittmar, NW cor. SE Section 18-6-16w, has been completed for 10 bbls. in sand 400-26 feet.

Marshall County

Bilbo Oil Trust Co.'s No. 1 Taliaferro, SE cor. NE SE SE Section 14-5s-5, made 96 bbls. in sands 497-500 feet and 506-27 feet.

Muskogee County

Bryan Petroleum Co.'s No. 2 Simmons, CSL NE SE Section 4-15-15, is drilling at 1,525 feet. E. Price and others moved a machine in for No. 3 Howard, SE cor. NW NW NW Section 29-15-16. Wilson & Barnes' No. 2 Kelly, SE cor. NW SW Section 13-13-18, is drilling at 150 feet. H. D. Johnston and others' No. 3 Jordan, NW cor. NE NE Section 23-13-18, is spudding.

P. Boyle and others' No. 2 Russell, SW cor. NE NE SE Section 19-15-16, has been completed for 12 bbls. in sand 1,205-35 feet. Tidal Oil Co.'s No. 10 Gaines, C NE SW Section 5-14-18, is dry and abandoned at 2,023 feet. P. O. Miller and others' No. 2 Jackson, CEL NE NW Section 8-13-16, is dry and abandoned at 1,940 feet. H. D. Johnston and others' No. 1 Kelly, NW cor. SE SW Section 13-13-18, made 1,250,000 feet of gas in sand 518-22 feet. C. F. Ray and others' No. 2 Foreman, SW cor. NE SW Section 14-13-18, made 1,500,000 feet of gas in sand 507-22 feet.

Oklahoma County

Heenan & Coe and others made location for No. 1 Cunningham, NW cor. SW NE SW Section 1-11-3w. Indian Territory Illuminating Oil Co. and others' No. 1 Dennis, NE cor. SE SE Section 11-11-3w, is a cellar. Cromwell, Wirt Franklin Petroleum Corp. and others made location for No. 13 Trosper Park, NW cor. SW SW Section 12-11-3w.

Okfuskee County

Continental Oil Co. moved the rig in for No. 1 Simmers, C SW NW Section 32-12-10. E. L. Robinson and others' No. 6 Berryhill, C SE SW Section 35-11-9, is drilling at 1,435 feet. Regal Oil Co.'s No. 10 Simmers, NW cor. SE NE NE Section 11-10-11, is spudding.

Okmulgee County

H. G. Fair and others' No. 1 Luster, NW cor. SW NE Section 36-13-11, has been abandoned at 2,596 feet. Barnsdall Oil Co.'s No. 1 Simmers, SE cor. NW Section 32-12-10, has been completed for 18,000,000 feet of gas in sand 3,038-63 feet and 3,066-79 feet. E. L. Robinson and others' No. 4 Berryhill, NE cor. SE SW Section 35-11-9, made 15 bbls. in sand 1,479-83 feet. No. 5 Berryhill, SE cor. SW Section 35-11-9, has been completed for 15 bbls. in sand 1,484-89 feet. Champlin Oil & Refining Co.'s No. 16 Carter, NW cor. SE SW Section 15-11-11, made 145 bbls. in Wilcox sand 3,479-92 feet. Eagle Picher Lead Co.'s No. 3 Tiger, SE cor. Section 35-11-11, made 3,000,000 feet of gas in sand 2,663-64 feet. Jarvis & Holm's No. 2 Buckley, NW cor. NE NW Section 21-10-11, has been completed for 70 bbls. in sand 2,495-2,519 feet.

W. T. Campbell and others made location for No. 1 Freeman, SE cor. Section 18-14-11. Elm Oil Co.'s No. 2 Lewis, NW cor. SW NE Section 24-14-14, is drilling at 200 feet. Mitchel Oil Co.'s No. 5 Randall, NE cor. NW Section 30-12-12, is rigging up. L. C. Wheeler and others' No. 3 Fish, NW cor. SE NE Section 6-15-12, has been completed for 2,000,000 feet of gas in sand 2,153-2,209 feet, after plugging back from 2,636 feet. C. D. Burns' No. 15 Anderson, SW cor. NW NW NE Section 35-14-14, made 25 bbls. in sand 1,130-57 feet.

Osage County

J. J. Fitzstephens has a machine on the ground for No. 2, NW cor. NE SW Section 16-28-8. Peters Petroleum Corp. made location for No. 6, SW cor. NE SW Section 32-24-9. Mid-Co Oil Co. moved a machine in for No. 18, SW cor. NW NE SE Section 18-22-10. Oklahoma Natural Gas Corp. has a machine on the ground for No. 1,744, NW cor. NE SW SW Section 5-21-12. Oklahoma Power & Water Co. moved a machine in for No. 126, NW cor. NE NW Section 9-20-10. Mid-Continent Petroleum Corp. made location for No. 1, SW cor. NE Section 34-20-10.

Indian Territory Illuminating Oil Co.'s No. 422, NW cor. SE NW NW Section 2-28-10, is dry and abandoned at 527 feet. Vacuum Oil Co.'s No. 6, SE cor. NW

A Great Financial Institution *also Rich in* Information

In The Exchange Banks of Tulsa, customers find stores of information about companies, individuals—and everything relative to credit rating in the oil fields. The discerning eye of this institution, like the beacon that blazes from the tower of its great building every night, follows the activities of the oil industry to the furthermost reaches of the globe. Men who are trained in the business of oil as well as the business of finance handle the problems in petroleum which are entrusted to them, daily. There is no district so remote, in the oil world, that it does not have someone who deals with The Exchange Banks of Tulsa.

Combined Capital, Surplus and Undivided Profits Exceed $10,000,000; Resources Exceed $100,000,000

EXCHANGE BANKS OF TULSA

The Exchange National Bank — The Exchange Trust Company

NW Section 11-26-6, made 120 bbls. in Burbank sand 2,820-74 feet. McCune Wormser and others' No. 4, NE cor. SE NE Section 15-24-8, has been completed for 250 bbls. in Wilcox sand 2,524-38 feet. Tidal Oil Co.'s No. 7, SW cor. NW SE Section 20-24-9, made 20 bbls. in sand 2,200-33 feet, after it was plugged back from 2,389 feet. Indian Territory Illuminating Oil Co.'s No. 259, SE cor. NW NW Section 36-23-10, is dry and abandoned at 2,162 feet. L. G. Stanley's No. 8, NW cor. SE Section 36-22-8, made 5 bbls. in sand 543-56 feet. Oklahoma Power & Water Co.'s No. 129, SW cor. SE SW Section 9-21-9, made 2,500,000 feet of gas in Skinner sand 2,170-2,215 feet. No. 125, NW cor. Section 9-20-10, has been completed for 750,000 feet of gas in sand 370-78 feet. Sand Springs Home Oil Co.'s No. 4, CNL S half NW, Section 29-20-11, drilled to 2,339 feet and plugged back to 2,330 feet where it made 500,000 feet of gas.

Pawnee County

John H. Markham's No. 7 Hull, SE cor. SW Section 14-21-7, is spudding. Canadian Oil Co.'s No. 5 Martin, NW cor. NE Section 7-20-8, is drilling deeper at 2,306 feet. Hay and others moved a machine in for No. 4 Copeland, CEL W half NW SW Section 26-20-9. Johnson Oil & Refining Co.'s No. 2 Byles, NE cor. SE NE Section 27-20-9, is drilling at 500 feet. Swift and others made location for No. 6 Smelzer, SW cor. NE Section 35-20-9. National Refining Co.'s No. 2 Zickelfoose, CSL SW SW Section 36-20-9, is drilling at 2,270 feet. Johnson Oil & Refining Co.'s No. 1 Herringford, NE cor. NW Section 25-21-7, is dry and abandoned at 2,750 feet.

Payne County

Shaffer Oil & Refining Co.'s No. 1 Daws, SE cor. NW Section 4-18-5, made 30 bbls. in sand 2,725-45 feet. No. 1 Echo Hawk, SW cor. NE Section 4-18-5, has been completed for 1,500,000 feet of gas in Wilcox sand 3,579-3,614 feet. Transcontinental Oil Co.'s No. 1 Daws NW cor. SE Section 4-18-5, made 6,000,000 feet of gas at 2,740-95 feet.

Pittsburg County

R. P. Lester has a machine on the ground for No. 2 Carney, NE cor. NW NE Section 15-7-18. Robert Galbreath's No. 1 Jackson, C W half SW Section 28-4-13, is dry and abandoned at 350 feet.

Pontotoc County

Benedum & Trees Oil Co.'s No. 3 Lowery, NW cor. SW NE Section 31-5-5 Bebee Pool, is a cellar. Location has been made for No. 1 Browall, SE cor. NE NW Section 31-5-5. Universal Oil Co. is erecting the rig for No. 3 Crueger, NW cor. SE SW Section 25-5-6. Belchic & Laskey moved the rig in for No. 2 Oliver, NW cor. SW NW Section 32-5-7.

Benedum & Trees Oil Co.'s No. 6 Mole, SW cor. NW NE Section 31-5-5 Bebee Pool, has been completed for 500 bbls. at 2,651 feet. Superior Oil Co.'s No. 5 Maulden, SW cor. NW Section 32-5-5, swabbed 133 bbls. from Viola lime 2,495-2,655 feet.

Pottawatomie County

Magnolia Petroleum Co. made location for No. 1 Peck, SW cor. NW Section 6-8-5. Amerada Petroleum Corp. made location for No. 2 Smith, SW cor. NE NE Section 8-8-5 Maud Pool. No. 3 Smith, NE cor. Section 8-8-5, is a cellar. Sinclair Oil & Gas Co. is building the rig for No. 2 Smith, NW cor. Section 9-8-5. Independent Oil & Gas Co.'s and Mid-Kansas Oil Co. made location for No. 1 Asher, NE cor. Section 3-7-4, St. Louis area. Minnehoma Oil Co.'s No. 3 Simms, NE cor. SE Section 16-7-4, is drilling deeper at 4,245 feet. Magnolia Petroleum Co. is building the rig for No. 1 Walker, NE cor. NW NE Section 21-7-4. Magnolia Petroleum Co. has the rig on the ground for No. 2 Ogle, NE cor. SE SW Section 22-7-4. Interocean Oil Co.'s No. 2 Coley, SW cor. NE SE Section 24-7-4, is rigging up. Gypsy Oil Co. is building the rig for No. 1 Pappan, NE cor. Section 29-7-4. Russell and others' No. 1 Coley, NW cor. SE SE Section 24-7-4, is a cellar.

Cal Cul Oil Co.'s No. 1 Wilson, NW cor. NE NW Section 9-8-3, is dry and abandoned at 5,490 feet. Empire Oil & Refining Co.'s No. 3 Smith, NE cor. SE NE Section 8-8-5 Maud Pool, made 605 bbls. in Hunton lime at 4,033-50 feet. Indian Territory Illuminating Oil Co.'s No. 1 Weldfelt, NE cor. NW Section 2-7-4 St. Louis Field, drilled to 4,010 feet in Sylvan shale, plugged back to 4,007 feet and made 80 bbls. No. 2 Weldfelt, NW cor. NE NW Section 2-7-4, has been completed for 1,050 bbls. in Hunton lime 3,744-3,943 feet. Magnolia Petroleum Co.'s No. 4 Risenhoover, SE cor. NE Section 14-7-4, drilled to 4,430 feet, plugged back to 4,240 feet and made 25 bbls. No. 2 Tartar, NW cor. SW Section 15-7-4, has been completed for 2,850 bbls. in Simpson sand 4,285-89 feet. Pierce Oil Corp.'s No. 1 Sanders, NW cor. SW Section 20-7-4, has been deepened from 4,068 feet then plugged back to 4,219 feet where it made 11 bbls. Independent Oil & Gas Co. and Darby Petroleum Co.'s No. 2 Curley, SW cor. SE NW Section 22-7-4, has been completed for 14,000,000 feet of gas in Hunton lime 3,600-45 feet. Shell Petroleum Corp.'s No. 2 Hines, SE cor. SW NW Section 22-7-4, has been shut in for 10,000,000 feet of gas in Hunton lime at 3,637-3,798 feet. Phillips Petroleum Co.'s No. 3 Cherry, SW cor. NE NE Section 25-7-4, is dry and abandoned at 4,300 feet. Tidal Oil Co. and others' No. 1 Sanders, SE cor. NW Section 27-7-4, is dry and abandoned at 4,526 feet. Sunray Oil Co. and others' No. 1 Bourbonnais, NE cor. Section 28-7-5, is a dry hole at 4,310 feet.

Seminole County

Gypsy Oil Co. has the rig on the ground for No. 1 Taylor, SE cor. NE SW Section 19-9-6. Carter Oil Co. is building the rig for No. 3 Coker, NW cor. SE SW Section 2-8-5 Carr City Pool. The rig is on the ground for No. 4 Coker, NE cor. SE SW Section 2-8-5. Gypsy Oil Co. and others made location for No. 1 Bruner, NE cor. SE NW Section 23-8-5. Continental Oil Co. and others' No. 1 Harjo, NW cor. SE Section 26-8-5, is a rig under construction. Magnolia Petroleum Co. moved the rig in for No. 2 Spillman, SW cor. NE SE, Section 12-6-7 Sasakwa Pool. Producers & Refiners Corp. is moving the rig in for No. 1 Lucy, SW cor. NW SE Section 12-5-7. Magnolia Petroleum Co. has the rig up for No. 2 Parley, SW cor. SE SE Section 14-5-7. Sunray Oil Co. made location for No. 9 Culley, NE cor. SW NE Section 18-5-8 Allen Pool.

Indian Territory Illuminating Oil Co. and others' No. 1 Chatkey, SW cor. NE Section 12-10-6, is dry and abandoned at 4,795 feet. Amerada Petroleum Corp.'s No. 1 Marks, SW cor. NE Section 32-10-6, has been abandoned at 4,430 feet. Burke-Greis Oil Co. and Darby Petroleum Co.'s No. 1 Varnum, SW cor. Section 32-10-6, made 319 bbls. from Wilcox sand 4,309-40 feet. Carter Oil Co.'s No. 1 Shepherd, NE cor. Section 6-9-6 Earlsboro Pool, has been completed for 105 bbls. in Wilcox sand 4,295-4,307 feet. No. 2 Shepherd, SW cor. NE NE Section 6-9-6, made 105 bbls. from Wilcox sand 4,305-20 feet. The Texas Company's No. 4 Mayhue, NE cor. NW Section 14-9-6, has been completed for 625 bbls. in Wilcox sand 4,199-4,226 feet. The Prairie Oil & Gas Co.'s No. 2 Stubbs, NW cor. SE NE Section 18-9-7 East Seminole Pool, has been completed for 200 bbls. in Hunton lime 4,300-90 feet. No. 3 Stubbs, SW cor. NE Section 18-9-7, made 260 bbls. in Wilcox sand 4,318-24 feet. No. 1 Noble, SW cor. SW Section 11-9-7, was deepened to Hunton lime 4,066-4,188 feet and made 45 bbls. Carter Oil Co.'s No. 2 D. Rogers, NW cor. SW SE Section 2-8-5 Carr City Pool, has been completed for 2,725 bbls. in sand 4,219-25 feet. Empire Oil & Refining Co.'s No. 13 Cluck, SE cor. NE Section 11-8-5, made 15 bbls. in Wilcox sand 4,468-86 feet. Gypsy Oil Co. and others' No. 1 Conner, SW cor. NW SE Section 20-7-6 Little River Pool, is dry and abandoned at 4,425 feet. The Prairie Oil & Gas Co.'s No. 5 Melton, SW cor. SE NW Section 6-8-6, is dry and abandoned at 4,320 feet. No. 5 Talley, SW cor. SE SW Section 14-7-6 Little River Pool, made 100 bbls. in Gilcrease sand 3,136-62 feet. Sinclair Oil & Gas Co.'s No. 7 Phillips, SE cor. Section 5-7-7 East Little River Pool, has been completed for 2,254 bbls. in Wilcox sand 4,179-4,212 feet. Producers & Refiners Corp.'s No. 1 Sakteke, NW cor. Section 9-7-7, drilled to 4,182 feet, plugged back to 4,178 feet and made 145 bbls. Indian Territory Illuminating Oil Co.'s No. 1 Fleet, NW cor. SE Section 13-6-7, has been abandoned at 4,748 feet. Sinclair Oil & Gas Co.'s No. 3 Jefferson, SW cor. NE SE Section 23-5-7, swabbed 502 bbls. from Wilcox sand 4,160-65 feet. No. 4 Jefferson, SE cor. NW SE Section 23-5-7, has been completed for 627 bbls. in Wilcox sand 4,234-40 feet. The Prairie Oil & Gas Co. and T. B. Slick's No. 1 Mingo, NW cor. NE Section 25-6-6, has been abandoned at 2,985 feet.

Stephens County

Pace and others' No. 1 Vass, SE cor. NW SW Section 23-2s-7w, has been abandoned at 2,005 feet. No. 1 Horton, SE cor. SW SE Section 26-2s-7w, is dry and abandoned at 2,795 feet. No. 1 Butler, NW cor. SW Section 35-2s-7w, has been abandoned at 2,909 feet.

Tulsa County

L. L. Boyd's No. 1-A Horn, SE cor. NW Section 23-18-14, is rigging up. Keener Oil & Gas Co.'s No. 1-A Unallotted, NW cor. SW NW Section 9-16-13, is rigging up.

Wagoner County

Tulsa Drilling Co. has a machine on the location for No. 1 Walker, SE cor. NW NE NW Section 23-18-17. Knox & Shouse's No. 1 Murphy, SE cor. SW NE Section 18-17-16, is rigging up to deepen from 992 feet. Barnes & Hanks' No. 1-A Hewett, NE cor. SW NW SW Section 9-18-15, made 7 bbls. in sand 1,213-20 feet. No. 1-A Hurd, NW cor. SW NE SW Section 9-18-15, has been completed for 10 bbls. in sand 1,235-45 feet. W. C. Hatch's No. 5 Hall, SW cor. SE Section 11-18-15, is dry and abandoned at 1,500 feet.

EAST CENTRAL TEXAS

(Continued from Page 70)

One wildcat is to be drilled on the W. F. Huddle 100-acre tract, 150 feet from the north and east corner. This location is about 5 miles southwest of the discovery well, in the L. Richardson Survey, and the location made by the Shaw Oil Co. Another location said to be only a tentative one, is approximately 6 miles west and 4 miles south of the discovery. This location was reported to have been made by the Central Oil Co., 2,310 feet from the east line of the lease and survey, and 650 feet from the south line of the lease on the S. J. West 585-acre tract in the A. C. Walters Survey. It is about 3 miles northwest of the town of Ben Wheeler.

The Pure Oil Co. will have its 10-inch line to Chandler, and loading rack at that point, completed in about a week, ready to run oil from its No. 1 Jarmon, the discovery well which is averaging 265 bbls. of oil daily through a half-inch choke with 50 pounds back pressure. As soon as this 10-inch line is completed oil will be loaded out from the tank rack to the company's refinery at Smith's Bluff.

Four and three-quarters-inch casing will be run to help increase production, as soon as the first 55,000-bbl. tank is completed this week. The well is now flowing through 9¼-inch casing with a 6⅝-inch liner set in the sand at 2,610-2,710 feet, and the smaller casing in the hole should materially increase the flow. At present there is not enough storage to handle greater daily production, consequently the delay in running the smaller casing until one of the large tanks is completed.

Although the unit plan of development will no doubt be worked out for the field at Van, covering the large block of acreage held by the Pure Oil Co., and nearby acreage owned by the aforementioned companies, there is bound to be much wildcatting in this new area, and new wildcat tests will probably be announced every week. They will all be extremely interesting at present due to this being an absolutely new area hardly touched by geologists, instruments or drill stems, and each test will be watched closely when it reaches a considered depth where the Woodbine sand is figured to be found. The country, surrounding the discovery, in all directions is now getting a thorough combing by geologists, scouts and land men of the various companies, the geologists contacting surface conditions and the scouts and land men the landowners.

In Mexia Field

In the Mexia Field of Limestone County, C. F. Lytle's No. 2 Thompson, a deep test, has found a sandy lime showing oil at 4,320-40 feet, the bottom of the hole being 4,345 feet. A string of 6⅝-inch casing has been cemented preparatory to testing. This test was started for a Trinity sand test and is just 28 feet northeast of No. 1 Thompson which was drilled to 6,068 feet and abandoned.

Killiam & Phillips have abandoned their No. 4 Jones, a Falls County wildcat, and in Leon County, Reiter and associates have quit No. 1 Busby, which has been shut down several months at 3,014 feet. Texas Petroleum & Development Co.'s No. 1 Phillips, Thomas Chambers Survey, Milham County, has been abandoned at 3,712 feet.

On the Boggy Creek Dome, Anderson and Cherokee Counties, Humble Oil & Refining Co.'s No. 3-A Jones is drilling sticky shale at 2,487 feet. No. 3 Tom Jones is drilling shale and lime at 1,100 feet. No. 1-B Todd is rigged up. No. 2 Gauger is drilling shale and lime at 2,707 feet. No. 3-B Elliott & Clark is in sandy shale at 3,316 feet. Magnolia Petroleum Co.'s No. 1 Williams, on the north side of the dome, is fishing drill pipe at 3,915 feet.

Humble's No. 1 Birdwell, on the Posey Saline, also Anderson County, is drilling shale at 1,342 feet. Magnolia Petroleum Co.'s No. 1 Duran, Rusk County, is drilling lime and shale at 3,714 feet. In Robertson County, Killiam & Phillips have made location and rigged up for No. 1 Scramalde.

In Falls County, Gruver and associates' No. 1 Westbrook, which tested salt water in the Edwards lime at 1,270 feet, has plugged to 927 feet where a showing formerly passed up will be tested.

At Mexia, Limestone County, a Woodbine test will be made by Why Not Oil Co.'s No. 3 Rhea, which has spudded.

Production

The daily average production of the pools of East Central Texas during the past week follows:

Boggy Creek	3,377
Cedar Creek	80
Currie	409
Hill County	53
Mexia	4,990
Minerva	600
Nigger Creek	230
Powell	6,829
Richland	275
Thrall	33
Van	258
Wortham	980
Total	18,114
Week ending November 1	18,310
Decrease	196

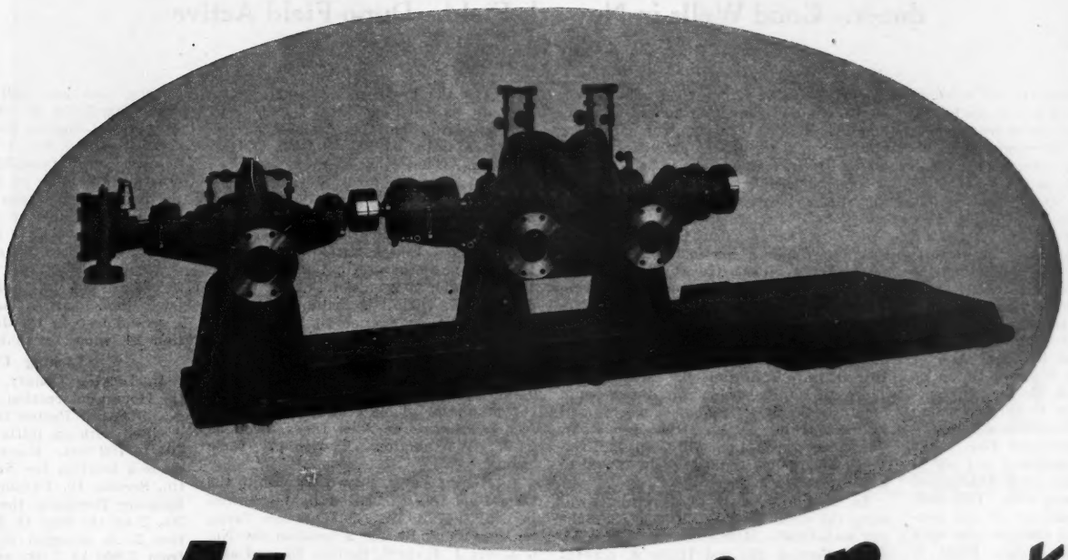
E. V. FOWLER DIES

BOWLING GREEN, Ky., Nov. 9.—Edwin Van Hook Fowler, better known as "Pop," died suddenly Thursday morning. He was a son of Samuel F. Fowler of Baden, Pa., where he was born and reared. He was educated in Pittsburgh, Pa., and came to Bowling Green as an oil man some 12 years ago. At one time he was considered one of the most successful oil operators in the Warren-Allen County fields.

ERIE J. WILSON DEAD

BOLIVAR, N. Y., Nov. 8.—Erie J. Wilson, pioneer oil producer and president of the Producers' Gas Co. of Olean, died in the city hospital at Titusville, Pa., following an operation.

Mr. Wilson was born in Titusville 75 years ago. In 1880 he went to Richburg, N. Y., to engage in the oil business, later removing to Bolivar, where he had been a resident 45 years.



Absorption plant PUMPS

This distinctive Byron Jackson gasoline absorption plant unit consists of four centrifugal pumps with only five stuffing boxes, two of which are hot. This unit handles lean and fat oil, water and gasoline. These pumps are mounted on one extended cast iron base plate with two flexible couplings and require only one driver with control apparatus. A big saving in motor or steam turbine investment is thus effected. Built in the light of many years of experience, the simplicity of this Byron Jackson unit immediately commends itself to the practical operator. This is but one example of the special equipment this company builds for oil refineries. In addition, pipe line and water service pumps are offered for every conceivable use.

SINCE 1872
BYRON JACKSON CO.
Factories: BERKELEY, Los Angeles, Visalia, Calif.
Branches: NEW YORK and CHICAGO
San Francisco, Portland, Salt Lake, Tulsa, Dallas, Phoenix

BYRON JACKSON
CENTRIFUGAL PUMPS FOR EVERY SERVICE

300 Bbl. Completion for Seneca County

Second Well With Spray of Oil May Also Develop Producer. Good Wells in Newark Field. Dupo Field Active

By Whit
Staff Correspondent, Central West Fields

FINDLAY, Ohio, Nov. 11.—The bringing in of another old Trenton Rock producer far above the general average of good wells came as a surprise, as it did not show any oil to speak of for a few days producing close around 1,000,000 feet of gas, then blew itself in and flowed at the rate of better than 15 bbls. an hour and had an initial oil production of more than 300 bbls. in 24 hours. This well was drilled by Earl Ash of Amsden, Ohio, on the William Doran or James D. Watson farm, Section 1, Hopewell Township, Seneca County, close to 3 miles north of Tiffin. When the well blew into an oil producer five tanks were rushed to the lease and put up in jig time to save all the crude that could be saved from the heavy flow. This well is some distance in advance of any production of account and opens a new area for development. The Tiffin Field is rather spotted and when one of these large wells is brought in the scouts rush to the scene and there will no doubt be quite a drilling activity in the vicinity of the new well, similar to the Murphy Pool, also north of Tiffin, but in Liberty Township, Seneca County, and another pool that was later developed in the same county. The two older pools are practically surrounded by dry holes.

Another interesting well, also in Seneca County, is W. E. Poyser and others' No. 3 which is 500 feet from the south line and 350 from the east line of the Homer Martin farm, SE Section 25, Liberty Township. This well topped the Trenton lime at 1,403 feet and drilled 111 feet into the formation, to a total depth of 1,514 feet where there was a little spray of oil and about 2,000 feet of gas. It would not be surprising to see this well develop into an oil well as that is the history of many of the wells years ago in the same county.

J. H. Murphy and Sons have brought in a light gas well on the Ellen Crum farm, Section 7, Clinton Township, same county, about a mile north of Tiffin and between Tiffin and the good well on the Doran or Watson farm. The Moore Oil Co. was not so successful in a test drilled 800 feet from the south line and 50 from the west line of the W. W. Martin farm, mapped as the W. F. Crum farm, in the NE, Section 31, Pleasants Township, Seneca County and also north of Tiffin not far from the new oil gusher. It looks very much as though a heavy drilling play will be made there near the corner of four townships, Clinton, Hopewell, Pleasants and Liberty, all four of which have produced oil for many years. A bulk of the territory in the early days of the Tiffin Field was controlled to a large extent by the Sun Oil Co., and the Paragon Refining Co., both of Toledo. Practically all the old-time producing wells were abandoned and the wells, and equipment were purchased by Mack P. Colt.

Near Pemberville, in Freedom Township, Wood County, the Home Banking Co's No. 5 well, 800 feet from the north line and 200 from the east line of the H. G. Foos farm, SE, Section 13, pumped 10 bbls. at a total depth of 1,280 feet, or 72 feet in the Trenton.

CENTRAL OHIO

Twenty-seven completions were reported from the Central Ohio Field for the week, of which 7 were dry, 13 gas wells and 7 producers with an initial production of 309 bbls. Two nice oil wells were found in the Newark Field of Licking County, with one very good gas well in Lorain County, and two above the average in Summitt County. The gas companies are maintaining activities in all of the counties where gas is being found.

Ashland County made its worst showing during the week for several months, with only three completions. In Lake Township, the Golden Crown Oil and Gas Co. found a dry hole in a second test on the Harry Horn farm, Section 21, as there were no sands found. Ohio Fuel Gas Co. made a location for No. 1 on the Angeline Darrow farm, Section 23, Green Township. A dry hole was drilled by the Kemrow Co. on the J. R. Brown farm, Section 6, Montgomery Township, there being no Berea sand found by the drill. Same company found a dry hole in No. 1 on the Mrs. E. J. Cummings farm, Lots 76-77 in Sullivan Township, same county, from 2,608 to 2,612 feet.

In Medina County, Lafayette Township, the Ohio Fuel Gas Co. has a light gas well in No. 1-4859 on the Clara M. Jones, Section 29, and Hulse & Kundtz are drilling a second test on the Mary J. Young, Section 29, same township.

In Lorain County, the Ohio Fuel Gas Co. found an unusually good gas volume in its No. 3-4864 on the Julia Clark farm, Sections 13-18 Carlisle Township. Same company made a location on the John Koliha farm, Lots 46-47 Grafton Township, and William Bradley's test on the William Bradley, Lot 1, Wellington Township, same county, is a very light gas well in the shallow sand from 196 to 206 feet.

Wayne County

In Wayne County, the Ohio Fuel Gas Co.'s No. 2-4851 William Swope farm, Section 7, Congress Township, is a duster, owing to the broken sand found. Same company is drilling No. 1-4886 Wm. Gessner farm, and No. 1-4888 Keeler-Anderson farm, both in Section 1, Harmon and George made a location on the Lewis Howman farm, Section 2. Same firm has a dry hole on the Charles Mark farm, Section 36, Chester Township, from 545 to 570 feet, which is the Berea sand.

In Holmes County, Ripley Township, Howman and others' No. 4 Rose Willard Lot 15, pumped 2 bbls. from 797 to 872 feet. I. E. O'Hail is drilling No. 4 on the P. M. Young, Section 16, Knox Township, same county.

In Richland County, Monroe Township, the Ohio Fuel Gas Co.'s No. 1-4797 J. M. Reed farm, Section 23, is a light gas producer. Same company is drilling No. 1-4894 on the Alex Innes, Sections 24-25, Worthington Township, same county.

In Knox County, Brown Township, the Ohio Fuel Gas Co. has a light gas well in No. 2-4770 W. C. Workman farm, Section 15, and made a location for No. 6 Albert J. Richert, Section 25, and also drilling No. 2-4850 J. J. Hyatt, Sections and 3 and 6 and No. 1-4893 Charles S. Peater, same section. Pure Oil Co. is drilling on the Avery Yearhouse, Section 11, Union Township. Upham Gas Co. has an average gas well in a second test on the George W. Criss, Section 3, Butler Township, same county, from 2,811-51 feet.

In Coshocton County, the Ohio Oil Co. is drilling a second test on the Otto Aiken, Section 34, Clark Township.

In Summitt County, Greene Township, G. W. Crouse has an excellent gas producer in No. 3 on his own farm, Section 18, from 4,020 to 4,048 feet, and is drilling No. 4. F. A. Brendall and others also have a fine gas well in the Newburg sand from 3,454 to 3,461 feet on the A. Wise farm, Section 19. East Ohio Gas Co. is drilling No. 1 John Beese, Section 8, same township. Lighton and others are drilling on the O. H. Greenlo, Section 7, and Eagon and others drilling on the Katherine Selser farm, same section and township. In Franklin Township, F. A. Brendall and others have a dry hole test on the Grace D. Merwin farm, Section 13, from 3,990 to 4,010 feet. Same parties made a location for a second test on the John Steigner, Section 24, same township.

Licking County

In Licking County, Perry Township, the Hope Construction and Refining Co.'s No. 3 Sarah Rector farm, Section 9, is credited with an initial of 10 bbls. from 701 to 703 feet. Emerald Petroleum Co. made a location for No. 7 John E. Martin, Section 10, Fallsburg Township. In Hanover Township, the Everett Gas Co.'s No. 2 on the Dan O. Flenner farm, Section 7, is reported at 120 bbls. initial from 2,866 to 2,892 feet, and the Hope Construction and Refining Co.'s No. 4 Charles O. Bannon farm, Section 16, with an initial of 120 bbls. from 2,806 to 2,845 feet. Same company is drilling No. 2 Mary Fleming, Section 13, and made a location on the William H. Richey farm, same township. Pure Oil Co. made a location for No. 3 Homer C. Priest, Section 7, same township.

In Muskingum County, Jackson Township, Pure Oil Co.'s No. 1 George W. Crawford farm, Section 25, is reported good for 50 bbls. The Athey Co. made a location on the Harry E. Elliott farm, Section 16, Rich Hill Township. In Clay Township, Crawley and others made a location on the Phoebe Cherry, Section 3, and Bell & Scholl are drilling on the John G. Baughman Section 9. Pure Oil Co. made a location on the Arthur B. Dozier, Section 9, Brushcreek Township, and the Penn Ohio Oil Co. is starting a test on the J. C. Wilson and others' farm, Section 12, Union Township.

In Athens County, Berne Township, the Ohio Fuel Gas Co. has a good gas well in No. 2-4825 on the R. B. McKinley, Section 34, also a good gas well in No.1-4858 J. P. Louks, fractional section 51, in the lower Berea sand from 1,635 to 1,645 feet; total depth, 1,652 feet. Same company is drilling No. 3-4875 on the Fred S. Moore, Section 6-12, same township and has made a location on the Edgar C. Jones, Section 6, Ames Township, is drilling No. 1-4908 R. L. Clutter, Section 1, Waterloo Township, and No. 1-4903 on the Pearl A. Russell, Section 31, Rome Township. In Athens Township, Gross & Freebolt got a slight showing of oil in a second test on the W. E. Baker, Section 25, in the upper Berea sand from 1,102 to 1,112 feet, but it is called a dry hole. State Oil and Gas Co. is drilling No. 9 on the State Hospital Grounds, Section 15, Athens Township. Ohio Fuel Gas Co. made a location for No. 1-4924 Elmer M. Enlow farm, Section 11, Lee Township.

Meigs County

In Meigs County, Sutton Township, Tyree and others' No. 4 on the W. R. Lott, Section 24, is reported good for 4 bbls. from the upper Berea sand from 1,774 to 1,792 feet; total depth, 1,793 feet, and same parties' No. 9 A. E. Carnahan, Section 11, produced 3 bbls. from the first Cow Run sand from 595 to 600 feet. Same parties are drilling No. 10 on the H. D. Carnahan, same section. Preston Oil Co. is drilling No. 2-1361 Mary Davis, Section 18, same township. Frick and Barnaby are spudding in No. 8 on the

(Continued on Page 180)

County—	Comp. wells	Oil Prod.	Dry	Gas
Ohio	5	4	875	1	0
Webster	2	0	0	0	2
Hancock	1	0	0	1	0
Total	8	4	875	2	2

Four good shallow sand producers were found in the Ohio County area. Hupp and Duff's No. 16, on the Clyde Bartlett farm, in the Barnetts Creek Pool, is reported with an initial production of around 350 bbls., while their No. 22, on the L. L. Trodgen farm, in the Bartlett Pool, was reported at 100 bbls. initial.

The Rex-Pyramid Oil Co.'s No. 4, on the Charles Trodgen farm, just east of the discovery well on the Barnetts Creek Church lot, is also 350 bbls. initial.

James C. Ellis and others' No. 3, on the Albert Payne farm, in the Deanfield area of Ohio County, like its two former completions, is making a good showing, and reported good for 75 bbls.

Ellis and Bashaw's test, on the M. S. Bartlett farm, west of the old Ambrose-Weller Pool, is reported dry.

In Hancock County, the Missouri-Kansas Pipe Line Co.'s second test, 1,400 feet from the south line and 200 feet from the west line of the H. Corley 70 acres, was dry.

In Webster County, Sebree Field, Shadain & Westcott have a nice gas well on the S. T. Powell 366 acres, near Sebree, and west of the town a gas well has been found recently on the Linter Simon property. Center Gas Corp. is reported drilling tests on the Malton and Spencer farms, same area.

Field Pickups

The Eastern Gulf Oil Co. had a nice showing in No. 12 on the Morgan Ruby farm in the Red Hill section of Daviess

(Continued on Page 101)

TEST NORTHWEST OF PELLVILLE IS INTERESTING DAVIESS COUNTY

By Whit
Staff Correspondent, Kentucky-Tennessee

OWENSBORO, Ky., Nov. 9.—One of the important tests to be drilled as soon as conditions will permit will be located 600 feet from the north line and about 200 feet from the west line of the Mary Ann Frantz 176 acres, a few miles east of Knottsville, and northwest of Pellville, in Daviess County. This new location is north of the Roby Pool, which was opened a couple of years ago by the Leeper Oil Co. The Frantz lease is directly east of the Bob V. Howard. The well will start with a 15-inch hole, and if good commercial production is not found in the present known producing sands, the drill will be sent down to 1,500 feet. The casing and wooden conductor are already on the location and drilling will be started as soon as the tools can be put on the lease. Geologically the Frantz farm appears to be on a good structure and if the operators, Rowe and others, develop a well, it will mean a nice extension to the rapidly growing field.

Week's Work

A summary of the week's work in the Kentucky Field shows 8 completions, 4 producers with an initial production of 875 bbls., 2 dry holes and 2 gas wells.

"Action, Action! for God's Sake, Action"

Napoleon demanded action, and he got it, and through that action he was able to do things and make a name and fame.

The Creed of the Oil Man!

The average oil man works in a similar manner. His business requires action and lots of it, with speed and lots of it, and a thorough service. Sometimes he must pass by good things on account of a lack of quick delivery.

B. S. & B. Service has been keyed up to the creed of the oil man. It is Johnny-on-the-spot—pronto—right now!

Our Fabricating Plant is located in Kansas City, strategically placed for distribution to our many branches. We have fifty Field Stations throughout the Mid-Continent and Rocky Mountain oil fields, whereby service may be had right then and there from any of them. Complete stocks are carried at each Station, and there are tank crews always on the job ready to deliver and erect the B. S. & B. PERFECTION Vapor Pressure Tanks. Employing our own men there is no need of our scouring the country for labor, nor having to depend upon inexperienced or inefficient help.

Principal Branches!

ARKANSAS
El Dorado

OKLAHOMA
Bartlesville, Oklahoma City, Cushing, Tulsa

KANSAS
Augusta, El Dorado, Eureka, Hillsboro, Hutchinson, Madison, Newton, Valley Center, Wichita, Winfield

TEXAS
Amarillo, Big Spring, Borger, Breckenridge, Cross Plains, Dayton, Electra, Fort Worth, McCamey, Midland, Ranger, Wink

WYOMING
Casper, Cody

MISSOURI
Kansas City

NEW MEXICO
Artesia, Hobbs

MONTANA
Conrad, Kevin

FOREIGN
Olmeca, Alberta, Canada, Maracaibo, Venezuela, S. A.

B.S.&B.

Perfection

Vapor Pressure

TANKS

These tanks are built with SERVICE in mind. They are the watch dogs of your crude, protecting it against evaporation loss, and delivering it to the pipe lines at wellhead gravity. These tanks retain the light fractions of the crude under 16-ounce pressure. Made in a large number of sizes for different requirements.

May we tell you our story about the B. S. & B. PERFECTION Tanks? Just write Dept. B-9.

B S & B — EFFICIENT SERVICE DEPENDABLE

Black Sivalls & Bryson INC.

BARTLESVILLE ~ OKLAHOMA

Our Watchword — QUICK SERVICE

Southeast Ohio Leads in Production

Deep Sand Area Has Unusual Number of Better Than Average Completions. Calhoun and Roane Counties, West Virginia, Active

By D. S. Wakenight
Staff Correspondent, Eastern Fields

PITTSBURGH, Pa., Nov 11.—The week completed more good producers than for any like period in a number of months. All are in the deep sand territory in southeast Ohio. Prior to the past week the Clinton sand developments had been completing light wells. West Virginia and southwest Pennsylvania furnished only light pumpers. Calhoun and Roane Counties are very active in the gas areas. Operators are starting considerable new work in these two counties. Nine-tenths of all of the work under way and starting is in the old districts.

In the NE Section 5, Harrison Township, Perry County, McClay Brothers & Co. completed and shot in the Clinton sand a test on the Clyde Nelson farm. It produced 215 bbls. the first 24 hours. In the northwest quarter of the same township and county, the same parties completed and shot in the same formation a test on the Brown-Fry farm. It produced 190 bbls. the first 24 hours. In Section 7, Harrison Township, Perry County, the Romacher Oil & Gas Co. got a 50-bbl. producer at a test on the Robinson Ramsbottom farm

SOUTHEAST OHIO

In the SW Section 3, Clay Township, Muskingum County, Crowley & Carr completed a test on the Nelson McCoy Pottery Co.'s property. It produced 148 bbls. the first 24 hours after shot in the Clinton sand. In Section 6, Jackson Township, the Pure Oil Co. completed and shot in the Clinton sand a second test on the Lloyd McKee farm. It produced 180 bbls. the first 24 hours. In the SW Section 4, Harrison Township, the Rosa Oil Co.'s test on the C. N. Hyland farm produced 50 bbls. the first 24 hours.

In Section 29, Hardy Township, Holmes County, the East Ohio Gas Co. got a 100-bbl. producer at No. 4 on the H. and H. Bell farm. In Section 14, Richland Township, the same company completed a gasser at No. 3 on the A. and E. Harford farm.

In Section 13, Hanover Township, the Edward H. Everett Co.'s No. 3 on the D. O. Flenner farm produced 122 bbls. the first 24 hours after completed in the Clinton sand. In Section 14, same township, the Hope Construction & Refining Co. completed and shot in the Clinton sand No. 4 on the Charles O'Bannon & Co.'s farm. It produced 116 bbls. the first 24 hours.

Coshocton County

In Section 20, Newcastle Township, Coshocton County, the Preston Oil Co. completed a second test on the Sanford McClain farm. It produced 129 bbls. the first 24 hours. In the SW Section 25, the Pure Oil Co. completed a 60-bbl. producer at No. 12 on the G. W. Crawford farm.

In Section 9, Perry Township, Licking County, the Hope Construction & Refining Co. completed No. 3 on the Sarah M. Rector farm as a 2-bbl. pumper in the Berea grit. In the NE of Section 31, Enoch Township, Noble County, Levi Hall and others have a duster on the Otto Dilloray farm.

In Section 5, Paint Township, Holmes County, the Ohio Fuel Gas Co.'s test on the Mary Shrock farm is a gasser. In Section 39, the same company has a rig up on the L. Yoder farm. In Section 15, Richland Township, the Logan Gas Co. has a gasser on the Charles Garver farm. In Section 16, Washington Township, Muskingum County, the Atha Oil Co. is due in the Clinton sand on the Charles White farm.

Fishing at Deep Test

In Salem Township, Muskingum County, the Werley Oil Co. has drilled to 4,300 feet on the E. & M. Combs farm and fishing. In Section 6, Fallsbury Township, Licking County, the Emerald Petroleum has a 12-bbl. pumper at No. 6 on the J. E. Martin farm.

In the SW of Section 18, Harrison Township, Perry County, the Ohio Fuel Gas Co. has a gasser in the Clinton sand on the Wilson farm good for 500,000 feet. In the NE Section 20, Reading Township, same county, the Hope Construction & Refining Co.'s test on the A. T. Palmer farm is a 10 or 15-bbl. pumper in the Clinton sand. In Section 16, Pike Township, the Newberry Oil & Gas Co. completed in the Clinton sand a test on the Newberry heirs' farm. It is a gasser good for 500,000 feet and spraying oil at the rate of 5 bbls. a day. In the NE of Section 24, Pleasants Township, the Kachelmacher estate completed a light gasser in the Clinton sand on the Allen Wiggins farm. It will be given a shot.

In Section 15, Ripley Township, Holmes County, Holman & Helphrey completed in the Berea grit a second test on the L. G. McMillen farm. It is a light pumper. In the NE of Section 9, Malaga Township, Monroe County, Shay McMullin & Co. completed a 5-bbl. pumper in the white Keener sand on the Laura Claus farm.

In the shallow sand territory in Southeast Ohio, Lot 2, Bethel Township, Monroe County, the Shafer Farm Oil Co. completed in the Big Lime formation a 5-bbl. pumper on the J. N. Shafer farm. In Section 28, same township, the Sylvania Producing Co. has a 2-bbl. pumper in the Squaw sand at its No. 11 on the Kinsey heirs' farm.

Medina County

In Lot 2, Section 12, Chatham Township, Medina County, the East Ohio Producing & Refining Co. has a 25-bbl. producer in the Berea grit at No. 9 on the Steve and Anna Jelancsics farm. In Lot 3, Section 10, same township, the Oko Oil & Gas Co. completed in the same formation No. 31 on the Sanford-Watson farm. It is a 15-bbl. pumper.

In Section 13, Marion Township, Morgan County, W. S. Harris has a duster at No. 10 on the W. S. Harris farm. In Section 13, Berne Township, Athens County, Mary J. Smith & Co. have a duster in the Cow Run sand at No. 7 on the Charles C. Curtis farm. In Section 12, Gifford & Glazer are drilling on the Robert Smith farm.

WEST VIRGINIA

On Falling Rock Creek, Big Sandy district, Kanawha County, 1,500 feet southwest of the Buff Lick Oil & Gas Co.'s test on the Rebecca J. Young farm. the same company has completed a test on the Rebecca J. Young 5-acre lot. It is a gasser in the Weir sand good for 250,000 feet. Nothing was found in the Big Injun sand.

On Third Run, DeKalb district, Gilmer County, the Philadelphia Oil Co. completed in the Maxon sand a test on the M. E. Batton farm, showing for a 10-bbl. pumper. In Union district, Clay County, the United Fuel Gas Co.'s No. 3,882 on the Brown-Goshorn farm is a gasser in the Big Injun sand good for 375,000 feet.

In Clay district, Wirt County, Frederick L. Andrews has a very light pumper in the Cow Run sand at No. 11 on the Lenore L. Rex farm. In the same district, Simon Lebow and others have a 2-bbl. pumper in the same formation at No. 3 on the D. E. and S. E. Lewis farm. In Burning Springs district, Frederick Morehead has a 2-bbl. pumper in the Cow Run sand at No. 7 on the J. W. Hickman farm. In Clay district, E. Hayhurst and others are drilling a second test on the W. A. Lewis farm. In Geary district, Roane County, the United Fuel Gas Co. has a gasser on the James McLaughlin farm. In Center district, Calhoun County, Rothwell and others have a gasser on the Bruce Ferrell farm. In Sherman district, the Virginian Gasoline & Oil Co. has a 5-bbl. pumper in the Big Injun sand on the O. E. and B. V. Elliott farm.

Near Walkersville, on the left fork of West Fork River, Collins Settleman district, Lewis County, Chapman & Bennett completed a duster in the Cow Run sand on the J. J. Hoover farm. On the same river and same district the McCall Drilling Co. has a duster in the same formation on the A. B. Smith farm.

In Union district, Clay County, H. B. Davenport completed and shot in the Big Injun sand a test on the Thompson Land & Coal Co.'s 1,200 acres. It is located on Birch Run and is good for 7 bbls. a day.

Harrison County

In Ten Mile district, Harrison County, the Garrett-Lyons Gas Co. has drilled No. 2 on the Ferdinand Rodgers farm through the Fourth sand and found it barren. It will be operated as a gas well in the 50-foot sand. In DeKalb district, Gilmer County, the Philadelphia Oil Co. completed in the Maxon sand a 10-bbl. pumper on the W. B. Gainer farm.

In Murphy district, Ritchie County, the Daniel O'Day estate and others completed a test on the James Kirby farm. It is a 3-bbl. pumper in the Big Injun sand. In the same district, the Hope Construction & Refining Co. has a 5-bbl. pumper in the Maxon sand at No. 6 on the Noah & Gay Jordan farm. In Grant district, the Majestic Oil & Gas Co. has a very light pumper on the Carlile farm.

On Big Creek, Troy district, Gilmer County, the Hope Natural Gas Co. completed in the Big Injun sand No. 5 on the A. L. Rymer farm. It is a gasser good for 500,000 feet.

In Sherman district, Calhoun County, the Hope Natural Gas Co. completed in the Big Injun sand a gasser good for 500,000 feet on the S. A. Hays farm.

Lincoln and Cabell Counties

In Jefferson district, Lincoln County, the Cecila Oil & Gas Co. has a gasser in the Berea grit at No. 3 on the Croft Land Co.'s property. In Grant district, Cabell County, the Penn Natural Gas Co.'s test on the A. R. Keaton farm is a gasser in the same formation. In the same district, the Larner Gas Co. has a gasser on the Garlock & Co. farm.

In Washington district, Boone County, the Hope Natural Gas Co.'s No. 7,243 on the J. D. Allen farm is a gasser. In the same district, the Owens Bottle & Machine Co. has a gasser on the Lewis Bias farm. In Clay district, Wetzel County, Shields & Phillips completed a test on the Marcella Coughlin farm. It is dry and abandoned.

In Church district, Wetzel County, the Hundred Oil & Gas Trust Co. has a gasser in the Big Injun sand at No. 7 on the E. B. McDonald farm. In the same district, Null & Moorhead have a gasser in the Salt sand. In Cameron district, Marshall County, the Manufacturers Light & Heat Co.'s No. 3,324 on the F. F. Fletcher farm is a gasser in the Fourth sand. In McElroy district, Tyler County, local parties have a gasser on the Marion Williams heirs farm.

In Lincoln district, Wayne County, the Wayne United Gas Co. has a 500-foot gasser on the Wilson farm. On Board Camp, branch of Twelve Pole Creek, Harvey district, Mingo County, the Red Jacket Oil & Gas Co.'s No. 3 on its own property is a gasser in the Maxon sand good for 250,000 feet.

Gilmer County

In Troy district, Gilmer County, the Hope Natural Gas Co.'s No. 3 on the J. W. Rymer farm is a gasser in the Big Injun sand. In Collins Settlement district, Lewis County, W. W. Chapman's test on the J. J. Hoover farm is dry and abandoned. In Murphy district, Ritchie County, the Hope Natural Gas Co.'s No. 7,423 on the Michael and Patrick Golden farm is dry and abandoned.

In Geary district, Roane County, the United Fuel Gas Co. has a gasser in the Salt sand at No. 4,017 on the G. E. Keene farm. In Sherman district, Calhoun County, Clem Morris & Co. have a gasser in the Maxon sand on the Sarah E. Kersey farm. In Lee district, F. F. McIntosh & Co. have a Big Injun sand gasser at a second test on the W. R. Sapp farm. McCall & Co. have a very light pumper on the John Ralston farm in DeKalb district, Gilmer County. In the same district, Alfred Ellis & Co.'s test on the William J. Fling farm is dry in the Big Injun sand. In Church district, Wetzel County, the Delmar Oil Co.'s second test on the Anna Palmer farm is a very light pumper in the Gordon sand.

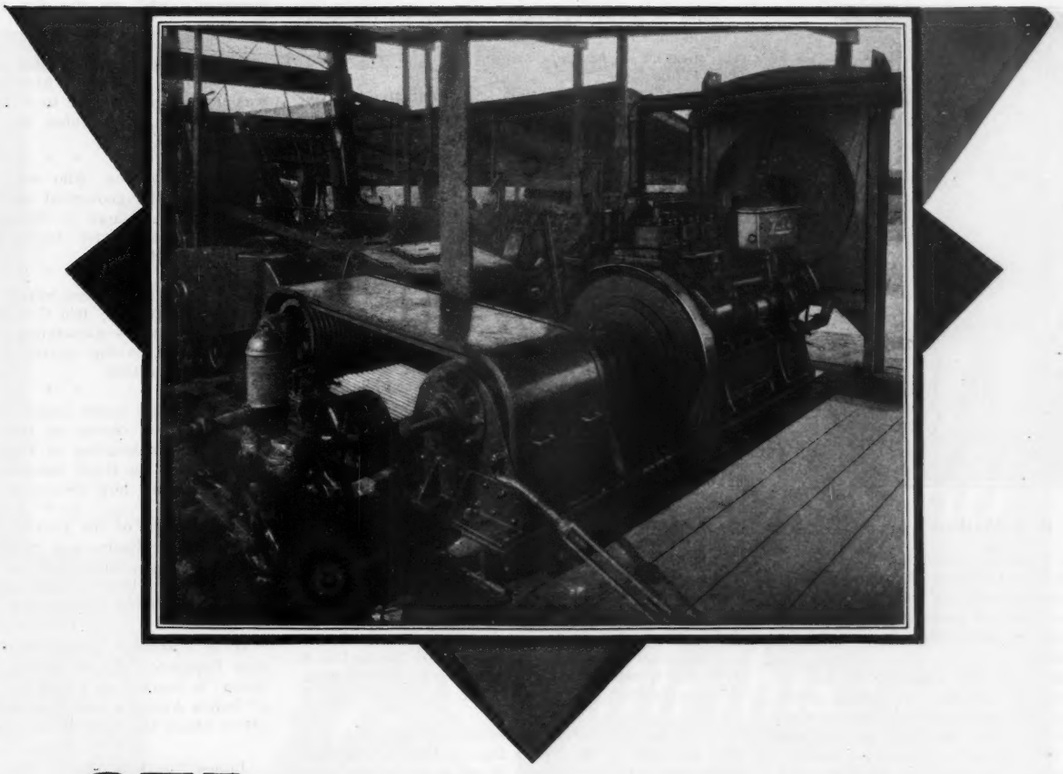
Drilling Tests

In Sherman district, Calhoun County, the Hope Construction & Refining Co. has the rig completed on the Miles W. Stump farm. In Center district, same county, the Hope Natural Gas Co. is rigging up on the M. B. Stevens farm. In the same district, G. W. Hamilton & Co. are rigging up on the W. A. Mahaney farm. In the same district, F. F. McIntosh & Co. are rigging up on the A. L. Gainer farm. In Center district, Gilmer County, the McCall Drilling Co. has started to drill on the Homer S. Westfall farm. In Grant district, Ritchie County, S. G. Moyer is due in the Big Injun sand on the Patrick McCabe farm. In the same district, the Hope Natural Gas Co. is drilling on the W. J. Shields farm. In New Milton district, Doddridge County, G. B. Travis heirs have started to drill on the Granville Willis heirs' farm.

In Troy district, Gilmer County, C. M. Bennett & Co. have part of the rig material at a location on the Perry Woofter farm. In Courthouse district, Lewis County, Feesley & Kraus are due in the sand on the W. F. Burkhammer farm. In Collins Settlement district, Lewis County, W. W. Chapman & Co. have started to drill on the J. J. Hoover farm. In Troy district, Gilmer County, A. L. Britton & Co. have rig material at a location on the William Burkhammer farm. In Jefferson district, Pleasants County, G. B. White and others are drilling on the Frank Griffith farm. In Washington district, Jackson County, H. W. Zogg & Co. have started to drill on the P. Wade farm.

On Barnes Run, Lee district, Calhoun County, Smith & Bickel have a rig completed. In Center district, Gilmer County, the C. N. G. Co. has the rig completed for a second test on the R. D. Stout farm. In Washington district, Jackson County, the Tom Harris Oil Co. has started to drill on the Moley Ludwick farm. In Curtis district, Boone County,

(Continued on Page 106)



275 hp. with gasoline or natural gas

L-HEAD ENGINES
THEY TAKE BETTER CARE OF THEMSELVES

Actual demonstrations in the field . . . with the simplicity and flexibility of steam as the standard of comparison . . . have more than proved that the Waukesha Great Six is an oil man's engine.

With its 275 horsepower . . . and more . . . the Great Six drives a mud-hog pump, operates the rotary and draw works, or runs cable tools with equal ease. And it has a great reserve of power *always ready* for the tough pull. Its ability to use natural gas or gasoline fuels equally well . . . together with the reliability and long life which have been built into it . . . make the Waukesha Great Six *a good investment* for drilling duty.

Interesting details are given in Bulletin No. 775. Write *Oil Field Equipment Division, Waukesha Motor Company, Waukesha, Wisconsin. Offices: New York, 8 West 40th Street; San Francisco, 7 Front Street. In the Oil Fields: C. F. Camp Co., Tulsa; Portable Rig Co., Houston; Bradford Supply Co., Bradford, Pa.*

981

WAUKESHA ENGINES

MEN KNOWN IN OILDOM

E. N. Watkins

E. N. Watkins, formerly general auditor of the Arkansas Natural Gas Corporation, became secretary of the corporation and its subsidiaries when Joe Zeppa resigned several months ago to become vice president of the Macmillan Petroleum Company of Los Angeles, Calif.

Mr. Watkins received his training in the oil business in the Doherty organization, having joined it in 1921 when he got a job with the Empire Companies in Bartlesville, Okla. In 1926, he was sent as auditor to El Dorado, Ark., where the Doherty interests had acquired the Arkansas Fuel Oil Corporation, and was promoted to assistant secretary-treasurer of that company. After the merger of the Arkansas Fuel Oil Corporation and its subsidiaries with the Arkansas Natural Gas Corporation, Mr. Watkins was sent to Shreveport, La., as assistant treasurer of the merged companies in March, 1928. At the time of his election to the Zeppa succession he was general auditor.

Mr. Watkins was born in Tyler, Tex., in June, 1899, and his rise in the oil business is attributed to natural ability and rigid application to his work. Outside of the office his interests are centered in his home. Besides Mrs. Watkins there are the two Misses Watkins, aged two years and one year.

PERSONAL PARAGRAPHS

B. R. Jackson, of the Anglo-Persian Oil Company, is visiting the United States.

* * *

G. T. Stanford, general counsel for the Sinclair Consolidated Oil Corporation, is in Europe.

* * *

W. J. Boyle, representing the Transcontinental Oil Company, has moved to San Antonio, Tex.

* * *

H. H. Swartz, Jr., of the Arro Oil Refining Company of Montana, visited in Casper, Wyo., on business.

* * *

Harry Oliver of Shreveport, La., has opened offices at San Antonio, Tex., and will make his home in that city.

* * *

J. B. Barnes, Jr., counsel for the Midwest Refining Company, has been in Chicago on a business visit.

* * *

R. S. Ellison, vice president and general manager of the Midwest Refining Company, returned recently from Denver and Cheyenne, and will leave soon for his company's holdings in northern Wyoming and Montana.

Martin Allday, of the Allday Drilling Company, of Wichita Falls, Tex., was a recent visitor in San Antonio, Tex.

* * *

D. F. F. Hintz, formerly of Denver, Colo., is now associate professor of geology at the University of Utah in Salt Lake City.

* * *

Burr McWhirt, valuation engineer for the Shell Petroleum Corporation, is on a trip to Michigan in the interest of his company.

* * *

Carl H. Beal, California representative of the Independent Oil & Gas Company of Oklahoma, has opened offices in Los Angeles.

* * *

E. G. Woodruff, consulting geologist of Tulsa, is leaving for Houston, Tex., and the Gulf Coast shortly for a month's trip on business.

* * *

Prof. Hugo de Bockh, principal geological adviser to the Anglo-Persian Oil Company, has been appointed director of the Geological Survey of Hungary.

* * *

Mr. and Mrs. W. G. Hugly have announced the arrival of a fine baby boy. Mr. Hugly is a geologist with the Rosita Oil Corporation at San Antonio, Tex.

* * *

H. J. Packard, engineer from the Denver, Colo., office of the Continental Oil Company, is making an inspection and check of the Michigan oil fields for his company.

* * *

Former Governor John Lind, of Minnesota, and A. T. Danaher of Minneapolis, inspected their oil holdings in Wyoming. Mr. Danaher was formerly a Casper, Wyo., resident.

* * *

David Wask will be in charge of the land and geological departments of the White Eagle Oil & Refining Company which is moving its offices from Abilene to Fort Worth, Tex.

* * *

C. E. Yeager, formerly assistant chief land man and geologist of the Texas Pacific Coal & Oil Company, has been made head of the departments with headquarters in Fort Worth, Tex.

* * *

R. W. Thompson, of the land department of the Wiser Oil Company, who has spent several weeks in Michigan, returned home to Sistersville, W. Va., for a few days the latter part of October.

* * *

W. W. Boyer, chief geologist for the Consolidated Royalty Company and Western Exploration Company, who has been making surveys in Texas for his companies, has returned to Casper, Wyo.

* * *

William H. Utz, vice president and director of sales, accompanied by Messrs. Lee and Jackson, also of Jenkins Brothers, New York, have been looking over oil properties in the Mid-Continent.

* * *

H. H. Hart has been appointed supervisor of franchises and rights of way of the Union Oil Company of California succeeding Hubert C. Ferry who was recently transferred to the legal department.

* * *

M. S. Rhoads, of Spencer & Rhoads of Fort Worth, Tex., was a recent visitor among San Antonio oil men. Spencer & Rhoads have gas properties in the White Point district of San Patricio County.

* * *

W. A. Newhoff, assistant district manager of sales at Los Angeles, Calif., for the Union Oil Company, has been transferred to San Francisco, having been appointed district manager for that territory.

* * *

W. L. Ogden, of Macassar Island, Celebra, Dutch East Indies, visited his brother, R. N. Ogden, Jr., in Casper, Wyo., while on vacation from his work with the Standard Oil Company of New York in the islands.

* * *

Ernest Hartford, assistant secretary of the American Society of Mechanical Engineers, was in Tulsa, November 7 on a trip to several cities where headquarters of sectional divisions are located in the Middle West. He returned direct to his headquarters in New York from Tulsa.

Jacques Vinmont has resigned as chairman of the board of the Pacific Western Oil Company in order to devote more time to his personal affairs.

* * *

R. W. Loucks, general superintendent for the Carter Oil Company in Montana and Wyoming, has returned to his Casper, Wyo., offices from the company's well on the Six Shooter anticline in Montana.

* * *

Eric T. Vincent, assistant engineer of the mineral division of the United States Geological Survey, was united in marriage to Miss Marian Brinton of Lincoln, Neb., on October 18. They will reside in Casper, Wyo.

* * *

Glenn Robertson, who was for a long time a member of the geological staff of the Associated Oil Company, is now in the geological department of the Cities Service Refining Company, in Los Angeles, Calif.

* * *

P. R. Naylor has been appointed director of sales and traffic for the Rio Grande Oil Company. He was for 33 years associated with the Continental Oil Company, having started with that company in its infancy in 1896.

* * *

Following an acute attack of appendicitis, Earl D. Wallace, in charge of the land department of Petroleum Exploration at Lexington, Ky., was operated on at the Good Samaritan Hospital in Lexington. He has now recovered.

* * *

R. E. Wertz, of the Prairie Oil & Gas Company, Independence, Kans., was in Casper, Wyo., on business. Mr. Wertz formerly lived in Casper while vice president and general superintendent of the Producers & Refiners Corporation.

* * *

H. W. Cardwell, president of the All Steel Products Company, 231 West English Street, Wichita, Kans., is leaving on a trip to include the oil fields of South America and is expected to return to his office about the first of the year.

* * *

James Charlton, Jr., of the Richfield Oil Company, has been appointed general superintendent in charge of all field operations in the southern and coast divisions while L. S. Cox has been appointed general superintendent of the company's operations in the northern division.

* * *

G. H. Jaques, general superintendent for the Midwest Refining Company, has returned from New Mexico where he attended at Roswell, the operators' conference with State Land Commissioner A. B. Crile concerning storage and production problems in the new Hobbs High Field.

* * *

Lester Landaman, formerly chief chemist for the Texas Pacific Coal & Oil Company at Fort Worth, Tex., is now with the Central Texas Refining Company as chief chemist. This company operates refineries at Brownwood, Angus and Minerva, Tex., with headquarters at Corsicana.

* * *

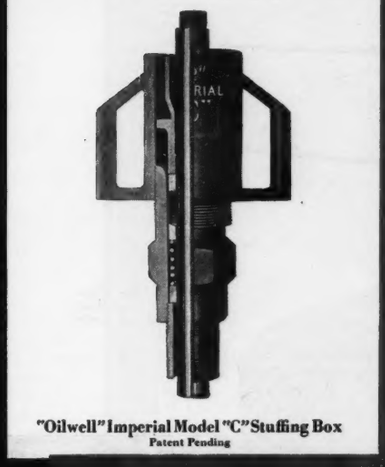
Heath M. Robinson, chief geologist for R. R. Penn, has been spending considerable time in the San Antonio, Tex., territory with K. D. Owen, until recently geologist with the Southern Crude Oil Purchasing Company, who will be in charge of the office which Mr. Penn is understood to be arranging to open at San Antonio.

* * *

Ralph W. Richards, of Washington, D. C., chief geologist of the Creole Petroleum Corporation of Venezuela, is visiting his family in Washington, D. C. Mr. Richards, who is a former director in Petroleum Exploration, spent several days at the general offices of that company in Sistersville, W. Va., renewing old acquaintances.

* * *

S. L. Cronin, head of the land department of the Texas producing division of the Pure Oil Company at Fort Worth, has been transferred to California for an indefinite period. He was accompanied west by Robert Toffelmire, in charge of the rental department at Fort Worth. F. B. Dury has been acting head of the land department, succeeding Mr. Cronin, and Lee Hawkins, formerly in the Texas State Land Office, has joined the company's staff, as successor to Mr. Toffelmire.



"Oilwell" Imperial Model "C" Stuffing Box
Patent Pending

"Oilwell" Tubing Hanger

"Oilwell" Berry Type Casing Head

Greater PUMPING EFFICIENCY Greater SAFETY and CONVENIENCE with this "OILWELL" EQUIPMENT

Sucker rods and valves can be pulled directly through the "Oilwell" Imperial Model "C" Stuffing Box without removing it from the tubing or requiring the use of a sucker rod guide or bell nipple.

The "Oilwell" Tubing Hanger is the only hanger that takes two separate holds on the tubing, protecting it from hazards of fire, windstorm and accident. Supports the tubing with both spider and slips and with a heavy steel coupling.

The "Oilwell" Berry Type Casing Head is constructed entirely of steel and is heavier than the ordinary casing head. Full size opening through the head, and full length threads at lower end and at four large side outlets.

For further information inquire at any "Oilwell" branch store.

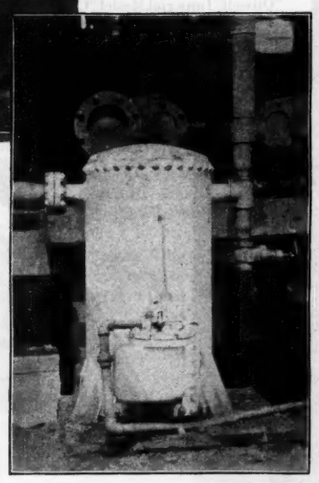
OIL WELL SUPPLY CO.

NEW YORK—LOS ANGELES—PITTSBURGH, U.S.A.—SAN FRANCISCO—TAMPICO—LONDON

WORLD'S OLDEST AND LARGEST MANUFACTURERS OF OIL FIELD EQUIPMENT

A NEW IDEAL-AJAX
Gives New Speed

An Older Type Plain Bearing Ideal-Ajax still in use in some fields.

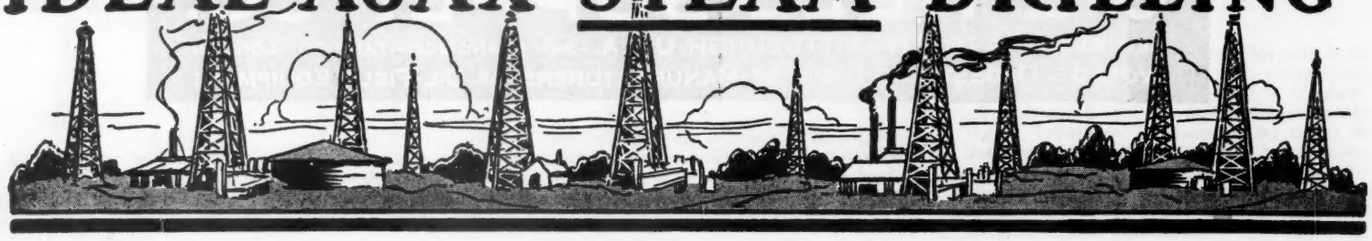


Ideal-Ajax Steam Separator—extra capacity, can be hooked up to old equipment.

YOUR present Ajax Equipment, where you want to "pep up" drilling, can be equipped with the new IDEAL-AJAX Steam Separator. It can be hooked up with your present equipment and old-type separator, or you can take off the old separator, hook up the new one, and so eliminate weight on the steam manifold.

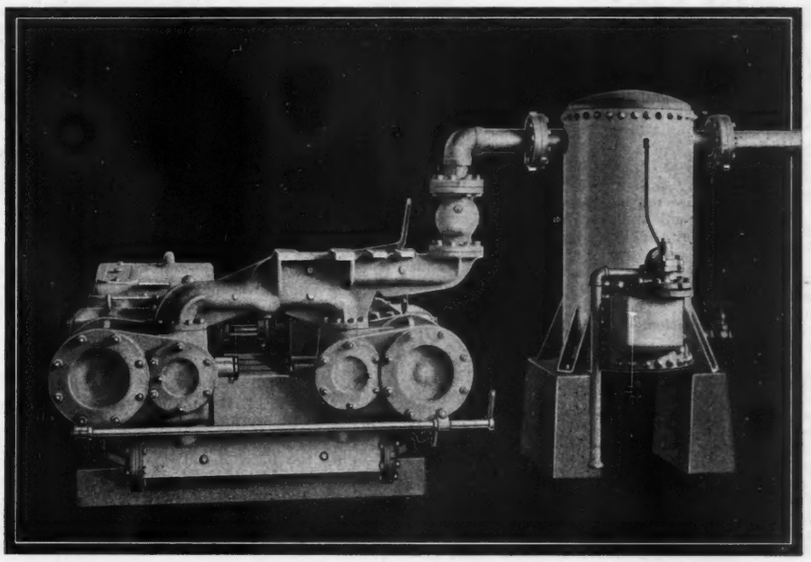
This is another evidence of the way in which AJAX is kept well in advance of present-day practice. Several models of Single and Twin Engines, plain and roller bearings, to meet all field requirements.

IDEAL-AJAX STEAM DRILLING



STEAM SEPARATOR

Especially on Long Steam Lines



IDEAL-AJAX 12 x 12 Twin with extra capacity Separator. The latest Ajax Outfit.

ILLUSTRATION above shows new Steam Separator furnished at the factory with the IDEAL-AJAX Twin Roller Bearing Engine. This is the latest Ajax Equipment.

The IDEAL-AJAX Roller Bearing Engine is making new records for speed, power and durable efficiency. During the past few years there have been as many refinements in Ajax Steam Engines as have been realized in the present-day automotive gas engine.

If you have not seen the NEW AJAX, talk with the National Supply Company man about its performance in different fields.

Made by AJAX IRON WORKS, Corry, Pa.

DISTRIBUTED BY

THE NATIONAL SUPPLY COMPANIES

In every oil field

ENGINES DELIVER POWER-PLUS

Field Problems and Their Solution

EDITED BY THOMAS F. SMILEY

In order that men connected with the drilling, producing and transporting branches of the petroleum industry may procure quickly a solution of many problems confronting them from time to time in their work, The Oil and Gas Journal has arranged with leading engineers and other recognized authorities to answer questions submitted by readers of this publication pertaining to the work of drilling and producing crude oil and transporting this product.

Everyone is invited to submit questions freely. These questions will be submitted to proper authorities by Mr. Smiley, who edits the page, and answers, based on the best available information, will be published. Each question should give as much detail as possible, especially where it relates to matters where depths of sands, types of sands and operations on adjoining properties would have a bearing on the problem involved. The source of all questions will be considered as confidential and only initials will be published in connection with the question.

In this connection, The Oil and Gas Journal will be glad to publish articles from field men who have devised new methods or practices which are improvements.

In case an immediate answer is important, one will be given by mail if the writer requests it.

ECONOMICAL WELL SPACING

Has any one system of well spacing been decided upon as better than others? Can you tell me what is supposed to be the most economical plan of well spacing on a 160-acre lease?—E. Y. S.

There is no one system of well spacing that can be applied to all areas nor can any one economical plan be set forth for spacing wells upon a 160-acre lease unless some particular lease is under consideration.

Variations of structure, sand texture and porosity; thickness of producing stratum, depth at which the producing horizon is found, cost of drilling wells, division of the surface and many other conditions that enter into the problem of well spacing are so great that no one set of rules can be laid down that will cover all conditions of drilling.

Dr. W. P. Haseman presented a paper before the fall meeting of the A.I.M.E. Petroleum Division in Tuisa on October 3, that is printed in The Oil and Gas Journal of that date on page 156 dealing with a formula prepared by Doctor Haseman that will permit some degree of uniformity to be adopted by a company for well spacing but this formula does not in itself indicate whether there should be any fixed number of wells to the 10, 20 or 40-acre lease. It does indicate what would be the best spacing for a given area if certain conditions are known.

In the same issue on page 180 there is an article by C. S. Corbett, geologist for the Gulf Oil Corp. dealing with this subject in another way. It outlines what would be the best method of draining a reservoir of its gas and oil if full control of the whole pool were vested in one company or man.

Without doubt too little attention has been paid to well spacing in the past and it has been estimated that $50,000,000 could have been saved in the Greater Seminole area if more thought had been given to this problem. By control of well spacing, and through it offset competitive drilling, a much more economical method of drilling and producing that area could have been employed at a saving to all concerned.

The problems involved in well spacing are many but much attention is being given to it, especially as it affects unit control, and it is probable that interesting articles on this whole subject will be printed from time to time.

SHOULD CONSULT BANKER

Please tell me how to obtain the value of an oil well located on one acre of land owned in fee and surrounded by other small tracts of one acre or more, or even less than one acre, these tracts also being owned in fee by other individuals. The geologists could give no information.—C. P. B.

Apparently you are trying to anticipate the earning power of money invested in a one-acre tract and there is no method of doing this because the money is no longer under the control of the investor and the earnings are not dependent upon any formula or forecast of expected results, but upon conditions that are possible of control by the managers of the property as well as some factors that even they cannot predetermine. Your banker would be better able to advise you.

EFFECT ON SAMSON POST

In a pumping well is there more strain on the samson post from one side than there is on the other, and is there need for any difference in the strength of the bracing?—L. G. A.

In a properly balanced pumping well there should not be any more strain on the well side of the samson post than there is on the engine side, for it is always the aim of the pumper so to balance his well that the counterbalance will equal the weight of the rods plus about one-half of the weight of the fluid lifted.

Under such conditions the fluid in the hole is balanced by the power required to lift it, this lifting force comes from the prime mover, and should equal the live load only. Under such conditions the load on each side of the samson post would be balanced.

However, in actual practice the power applied is usually more than that actually needed for lifting the live load of fluid and as a consequence this excess power tends to put more strain on the back side of the samson post, but it is usual practice to make the back and front brace for the samson post the same length, although the one on the hole side may be placed at a steeper angle than the back brace because of some rig building or drilling condition.

Because of the fact that some holes have been started at a point under the derrick that is not exactly 12 feet 6 inches or 11 feet 6 inches from the samson post it has been found necessary to move the 24-foot or 26-foot walking beam forward or backward over the saddle and under such conditions the samson post is required to carry an excess of load owing to the unequal levers made by the improperly set walking beam.

This latter practice is followed only under conditions that are set up through starting the hole out of position and operators are using precaution to see that the driller does not do it. The A.P.I. specifications for rig and derrick state that the hole shall be started 6 inches from the center of the derrick base on the center line towards the samson post with a tolerance of plus or minus one-half inch.

OUTSIDE OF TUBING WORN

I do not understand a condition which I found in a string of tubing which I pulled recently. There was considerable wear on the inside, from friction of the sucker rods, but that was to be expected. What I could not understand was the fact that I found many places where the tubing was much worn on the outside. As there is no chance for it to rub anything I am puzzled by this. Can you offer an explanation?—D. T. O.

Wear on the outside of the tubing might have been caused by wear or corrosion or a combination of these conditions.

Wear could be set up by the tubing moving up and down in the casing and because of deflection of the hole from the vertical this tubing would bind in places where the abrasion would take place.

It is an established fact that tubing will stretch and contract as it is loaded and unloaded by the movement of the valves in the working barrel and in the standing valve.

When the standing valve is closed and the weight of fluid load comes directly upon the bottom of the tubing, or on top of the standing valve which is placed in the bottom of the string, the tubing will be stretched and in some instances this is an appreciable movement amounting from 6 to 10 inches.

When the fluid load is transferred to the top side of the valves in the working barrel the force that has been exerted to pull the tubing downward is removed and the tubing will contract or move upward, much as a piece of rubber would contract if the force stretching it is removed.

This intermittent up-and-down movement of the tubing can cause wear, but often this movement generates a charge of static electricity that leaves the tubing at the point where it comes in contact with the casing, and at this place corrosion sets up. The tubing is the cathodic pole of the electric couple, and at that point the solution pressure of the metal making up the tubing would be relatively high so the tubing is corroded or dissolved. When examined it may show decided evidence of this and it might be construed as having been done by attrition.

If the well is handling oil with sulphur contents or hydrogen sulphide gas is produced along with the oil this corrosion might be accelerated.

The remedy is to drill straight holes, run the casing into them as nearly vertical as possible, cement behind the casing to keep it in position and spacers can be used around the tubing to keep it away from the sides of the casing. Rod protectors can be used upon the sucker rods to keep them from rubbing against the inside of the tubing.

WHY WAS IT CALLED THAT?

CATHEAD

This term evidently is derived from the nautical term cat-beam which refers to a beam that projects almost horizontally at each side of the bows of a ship and is used for raising the anchor from the surface of the water to the deck without touching the bows and for carrying the anchor on its stock-end when suspended outside the ship's side.

MIGRATES PRIOR TO DRILLING

When it is stated that oil migrates, does it mean that the oil in the ground moves about before any wells are drilled, or does it mean that when you begin to draw oil out of the sand the place formerly occupied by oil taken to the surface is filled by oil farther back in the sand and driven toward the hole by gas? —S. P. W.

Most geologists seem to agree that more is known about the facts governing the conditions required for the accumulation of oil and gas than is known of the origin of these substances.

It seems to be agreed that oil moves from the source rocks in which it was formed to the open porous rock in which it accumulates and from which reservoir it is removed when the well is drilled into it.

Whether this movement is to be considered as migratory in the sense that oil and gas are considered migratory with relation to the law is open for discussion, for it would depend upon whether the oil and gas was being considered from the time of its formation or from that time after which it had accumulated into reservoirs and become of commercial value and recoverable.

If it is considered as a commercial product it is difficult to decide whether any appreciable movement has taken place after the oil was deposited in the reservoirs from which it is drawn, but it is true that it will move in this reservoir after wells have been drilled into it, and this movement is dependent upon the force exerted by the gas that accompanies the oil and by hydrostatic pressure of waters surrounding the structure.

Oil has been known to seep out of oil-bearing rocks when those rocks were exposed to the atmosphere, and this is a natural migration, but the oil-bearing zone is depleted of its valuable hydrocarbons, especially those of the lighter gravities.

So in referring to oil as a migratory substance, the term is usually used in connection with the recovery of the oil and gas from the wells rather than to the movement of oil underground before the wells are drilled.

GETTING OIL SAMPLE

What is the procedure followed in getting a sample of oil from the bottom of a well to ascertain the pressure and the solubility of gas in the oil at that pressure? Is there any device made for this express purpose?—E. S. T.

The "depth bomb" is used to obtain samples of oil, gas or water, from the bottom of a well if it is desired to get the sample at the well pressures.

Several devices for this purpose are made, but all of them work on the same basic principle that as the depth of the liquid increases the pressure caused by the increasing head will also increase.

For determining the depth of sea waters Lord Kelvin made use of a simple device consisting of a slender glass tube ground or "frosted" inside which was lowered into the liquid with the open end down, and the depth is determined by the application of Boyle's law after the tube has been returned to the surface by noting the distance from the bottom that the liquid has wet the frosted inside surface of the tube.

This type of device cannot be applied to the oil well tests but R. H. Pence describes and pictures a depth bomb used in the oil industry in his article that appeared in The Oil and Gas Journal of August 22, 1929, pages 106 and 107. By reference to this article more detailed information on the subject may be had.

PARKERSBURG

Has served the oil fields of the world for 32 years

ECLIPSE PITMAN

The Eclipse Pitman was designed and developed to meet certain specific demands for an economical and practical pitman.

The construction and design of wrist pin bearings will permit absolute alignment of the pitman with the wrist pin.

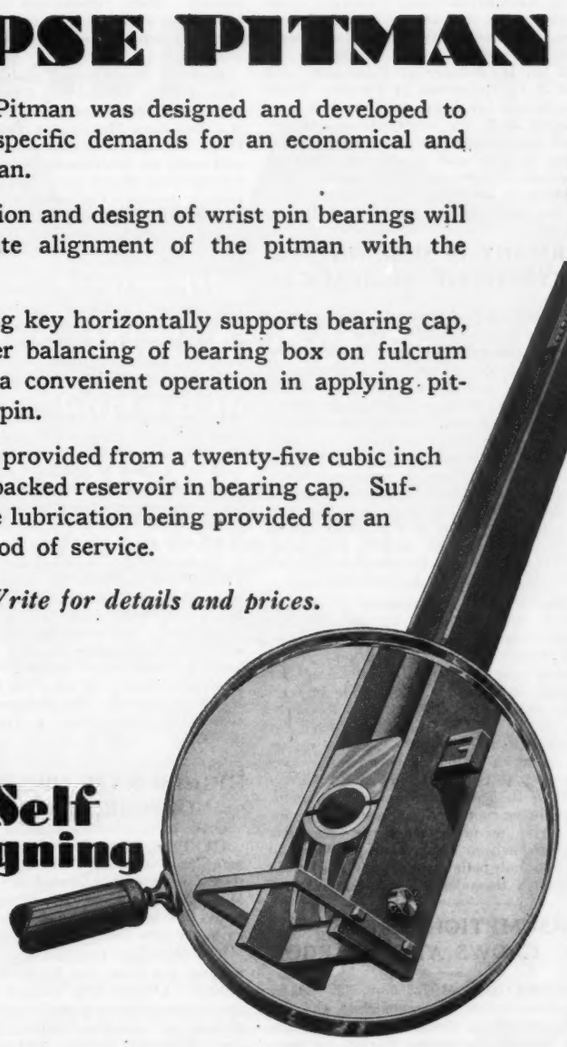
Retainer spring key horizontally supports bearing cap, and the proper balancing of bearing box on fulcrum pin, provides a convenient operation in applying pitman to wrist pin.

Lubrication is provided from a twenty-five cubic inch oil and waste packed reservoir in bearing cap. Sufficient positive lubrication being provided for an extensive period of service.

Write for details and prices.

Stirrup supplied when specified

Self Aligning



THE PARKERSBURG RIG & REEL COMPANY

EXECUTIVE OFFICES & MAIN PLANT

PARKERSBURG, WEST, VA.

PARKERSBURG PRODUCTS

Steel Derricks and Steel Crown Blocks	■	Rig Irons (A.P.I. Standard)	■
Chain Driven Sand Reels and Bailing Reels	■	Portable Drilling Machines (Wood and All-Steel)	■
Steel Wheels	■	Bolted Steel Tanks	■
All-Steel Standard Rigs	■	Miscellaneous Drilling Equipment	■

Check the equipment in which you are interested, tear out and return this coupon, with your name and address, to us, and we will send you complete information on the items checked.

Natural Gas Developments

CANADIAN NATURAL GAS AND PETROLEUM SESSION

CHATHAM, Ontario, Nov. 9. — With the largest attendance in its history, the eleventh annual convention of the Natural Gas and Petroleum Association of Canada was held at London, Ontario, President C. E. Steele presiding.

Verbal reports of the board of directors and the laws and legislation committees were presented by Major E. Sweet of Brantford. The latter report recorded the placing of mixed gases containing not more than 50 per cent of artificial gas by volume under the jurisdiction of the Ontario minister of mines, as is now the case with natural gas; and amendment to the municipal act to permit township councils to grant transmission franchises for mixed gas without reference to the rate payers.

Regret was expressed at the loss by death during the year of three valued members, J. H. Smith of Port Colborne, R. B. Kilpatrick of the Windsor Gas Co. and F. D. Witkovski of the Union Natural Gas Co. of Chatham.

A paper on "Coke Oven Gas as a Source of Supply for Public Utilities Companies," prepared by L. R. Forrest of the technical bureau of the Semet-Solvay Corp., was read by Mr. Merrill, the slides being explained by Mr. Fields. James J. Cowan of the Republic Light, Heat & Power Co., Tonawanda, N. Y., read a paper on "The Piping and Distribution of Coke Oven Gas or Mixed Gas to the Point of Delivery to the Customer."

A questionnaire, presided over by Vice President S. B. Severson, dealt with practical problems of the natural gas industry.

The report of J. B. McNary, chairman of the nominating committee, recommended the following slate of officers for 1930: President, C. E. Steele, Port Colborne; first vice president, S. B. Severson, Dominion Natural Gas Co., Buffalo, N. Y.; second vice president, J. A. Ritchie, Buffalo, N. Y.; secretary-treasurer, S. A. Morse, Union Natural Gas Co., Chatham; assistant secretary and assistant treasurer, Joseph McKee, Chatham; directors, Major E. Sweet, Brantford; J. B. McNary, Hamilton; Gordon D. Wickett, Windsor; George H. Smith, Port Colborne; J. A. McNevin, Chatham; and Jacob Kohler, Cayuga.

President C. E. Steele has held the presidency since the association was organized in June, 1919. Last year he intimated his intention of retiring, but he was prevailed upon to continue for one year more. In his presidential address, Mr. Steele stressed the improved relations between the gas companies and the public as a result of the work of the association.

The 1930 convention will be held at Niagara Falls on a date to be set by the executive, and will be a two-day convention.

WASTE GAS COMMISSION CONTINUES ITS SURVEY

CHATHAM, Ontario, Nov. 9. — The joint commission on waste gas, appointed by the Dominion and Alberta governments, held further investigations last month into the waste gas situation in the Turner Valley Field and elsewhere in Alberta. Sittings under the chairmanship of Dr. C. S. Camsell were held at Edmonton and Calgary. Since the previous meetings last summer investigations have been carried on in various fields in the United States. A further meeting will be held in January, when final reports will be presented by the various members on problems assigned to them for individual study. A final report will not be made until early in 1930. Investigations have been chiefly along three general lines: Development of new markets for surplus gas, storage in exhausted sands, and utilization in the production of industrial chemicals.

Doctor Ellsworth of Kingston is now in the Turner Valley Field investigating the problem for the Dominion government.

The National Research Council of Canada has made a grant to extend the experimental work in the utilization of natural gas, already being carried on by Prof. A. H. Boomer at Edmonton, and Prof. J. C. McLennan at Toronto. These experiments are being conducted in conjunction with the investigations of the waste gas commission. Researches in relation to hydrogen production and the pyrolysis of natural gas to benzine are expected to develop new economic uses for the waste gas.

GERMANY IS SEEKING SYNTHETIC HELIUM GAS

WASHINGTON, D. C., Nov. 11. — Germany expects in the near future to have synthetic helium gas if tests now being conducted by the I. G. Farbenindustrie, the dye trust, prove successful.

Dr. Leisler Kiep, director of the Hamburg-American line, while addressing the Nautical Club about problems of future air traffic, asserted that the greatest interest is being taken to create an artificial noninflammable gas to eliminate the danger of explosions especially while the airship is flying in a thunder storm. If the dye trust, he pointed out, could produce such a gas Germany would become independent of American helium.

Chemists who are engaged in experimental work relating to gas for the United States Government in this city have received this report without giving it great weight. Some of them think that perhaps an effort is being made in Germany to obtain helium from substances that in the past have not been used for helium extraction and that the report may refer to such experiments which they do not regard as important on account of the improbability of large quantities being obtained by such methods. They give no credence to the idea of a synthetic helium being made possible and they do not believe hydrogen gas could be treated to make it noninflammable.

CONSUMPTION OF GAS GROWS AT MUSKEGON

MUSKEGON, Mich., Nov. 11.—Daily gas consumption of commercial and domestic users in Greater Muskegon has been steadily increasing during the past year since the changeover to natural gas until it now equals the previous manufactured gas consumption and is twice the original natural gas output of the Muskegon Traction & Lighting Co.

During October the aggregate consumption was at the rate of 34,500,000 feet for the month. The increase to 1,000,000 and 1,250,000 feet daily represents principally an increased domestic business with more gas furnaces, ranges and other gas appliances.

Work on the foundation for the new 1,500,000-foot holder tank to be erected this winter is being rushed for fear there will not be enough natural gas to last through the winter. D. A. Powell, vice-president and general manager, believes the natural gas supply may give out by January 1. Discontinuance of one or more of the industrial pipe lines to the field would be beneficial to the Traction & Lighting company, and would prolong the life of the field for domestic use.

CALIFORNIA NOW USING 80 PER CENT NATURAL

Natural gas is fast eliminating the use of manufactured gas in California so that today 80 per cent of all the gas consumed in the State is straight natural gas, according to a report issued by Claude C. Brown, gas administrator appointed by the California Railroad Commission. When present gas line projects have been completed 98 per cent of all gas consumed in the State will be natural gas.

Building of the second unit of the Kettleman Hills to the San Francisco Bay region gas line is under way and so, too, is a line from Huntington Beach to San Diego. When these are completed there will exist an interconnected natural gas transmission system extending from Roseville in northern California to San Diego in southern California, a pipe line distance of 600 miles. This system will serve, it is estimated, some 2,000,000 consumers.

The first distribution of straight natural gas in California occurred in 1901 when a portion of the gas production from the old Salt Lake Field near the city of Los Angeles was piped into town for delivery through the system of the Southern California Gas Co.

Up to August of this year all the gas used north of Bakersfield was manufactured oil gas of 550 B.t.u. quality. However, on August 16 the first straight natural gas was delivered into San Francisco Bay area, through the pipe line from Kettleman Hills operated by the Pacific Gas & Electric Co.

Since that date natural gas service of 1,175 B.t.u. quality has been instituted along the line from San Jose to the San Francisco County line on the west side of the bay and from San Jose as far north as Hayward on the east side of the bay. San Francisco and East Bay area are still being served with 585 B.t.u. manufactured gas but this is expected to be changed to natural gas in April or May of 1930.

HIGHER RATE ORDER OPPOSED BY COMPANY

CASPER, Wyo., Nov. 9.—The fight to make the Northern Utilities Co. increase its gas rates is still in evidence at Shelby, Mont. This is a case where the gas company has been ordered by the court to raise its rate and refuses to do so.

The Northern Utilities was furnishing natural gas from the Sunburst Field to Shelby. A local firm formed to furnish gas in competition started to cut the rate as soon as it reached Shelby with its pipe line. This rate cutting was met by the first company and step by step the rate was cut until the local firm declared the other had cut the rate below where any profit could be had, and appealed to the Public Service Commission, which ruled that the Northern Utilities must raise its rate. On appeal, the case is now before the Supreme Court. In the meantime the Shelby town council threatens to revoke the franchise unless a higher rate is charged for gas.

SASKATCHEWAN FREAK GAS

CHATHAM, Ontario, Nov. 9. — Natural gas, thought to be related to pure nitrogen, has been struck in a water well on the Gross Brothers' farm near Bethune, Saskatchewan. The gas does not ignite, extinguishes flames held in its flow, and kills or anesthizes insect and animal life. The flow was struck in a 24-inch water well sunk to 48 feet in depth.

DEMAND OF CONSUMER HELD TO BE REASONABLE

The Public Service Commission of West Virginia recently issued an order requiring a utility producer and distributor to supply gas to a consumer who was already being supplied by another distributor.

The commission found from the evidence that the application for service was made in good faith, based on the fact that the fuel company's rates were 5 cents per 1,000 feet lower than the rates of the development company.

The gas companies contended that one of the principal purposes of state and federal regulatory statutes is to prevent unnecessary duplication of plant and facilities, unjust burdens upon the public resulting therefrom, and ruinous competition between persons and corporations employed in the public service.

The State's authority to prevent competition in utility service, in the interest of the public to be served, the commission held, cannot be exercised effectually except at the time of the installation of the facilities and the inauguration of the service.

"That authority carries with it a sound discretion as to the public necessity and convenience to be served by one or a dozen utility concerns offering the same service. When that discretion is exercised by granting a franchise to one utility and refusing all others, the result is a complete monopoly and perfect protection from ruinous competition and economic waste, in accordance with the ultimate theory of state regulation. On the other hand, when the municipal authority which has been exclusively designated by the legislature to exercise that sound discretion, does exercise it in the determination that the public interest is better served by the granting of franchises to two gas companies, as was the case in this instance, then the legislative intent as expressed by the municipal agent is not manifest to protect either utility from the competition of the other. And the development company having voluntarily sought and accepted a junior franchise, cannot now be heard to complain."

A.G.A. GAS LABORATORY HAS TWO MILES OF PIPE

The testing laboratory of the American Gas Association at Cleveland, Ohio, is said to contain more pipe than any other building of its size in the world. It has more than 2 miles of piping, averaging approximately a linear foot of piping for each square foot of floor space in its testing departments.

Altogether, more than 11,000 feet of piping, ranging from one-half to 4 inches in size, are used in this new $150,000 building erected and dedicated to the testing of manufactured articles which use gas, and the improvement of its public service. This institution houses all the appliance testing activities of the association.

The purpose of such a large amount of piping is to supply four kinds of gas, hot and cold water, compressed air, and vacuum to from 3 to 10 testing stations in each of 12 test rooms. The gas is piped into the building from three 5,000-cubic-foot holders located at the rear of the premises and from the city mains.

Among the thousands of gas appliances for domestic use submitted annually by manufacturers for testing are gas ranges, space heaters, water heaters, flexible gas tubing, house heating, boilers and furnaces, hot plates and laundry stoves.

FAST DELIVERY
OF
YOUNGSTOWN
PIPE

Field stocks carried at more than 70 points in the oil country.

"If Continental Sells It . . . . There Is No Better"

THE CONTINENTAL SUPPLY COMPANY

General Offices: ST. LOUIS. *Export Offices:* 74 Trinity Court, New York
London Offices: 316-17 Dashwood House, Old Broad St., E. C. 2

The Continental Supply Company, Ltd.
224 Traders Building, Calgary, Alberta, Canada

CONTINENTAL

Technical Questions Answered

BY CHARLES K. FRANCIS, PH.D., TECHNICAL EDITOR

This department of The Oil and Gas Journal is devoted to the manufacturing branches of the oil industry.

Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to submit their problems to Dr. C. K. Francis, technical editor. The department was created for the purpose of aiding managers, superintendents, engineers, chemists and all those engaged in the various phases of plant operation; also those connected with the marketing and utilization of petroleum products.

Questions should be submitted in as much detail as possible so as to assure a satisfactory answer.

All inquiries should be signed and if other than the given initials are to be used please indicate the desired letters.

Questions involving patented processes, intricate formulas and calculations and estimates of costs, for obvious reasons, cannot be answered. The replies will appear on this page within a reasonable time.

B.S. AND WATER IN FUEL OIL

I would appreciate it very much if you would give me information on the following: Our plant has been having considerable trouble with the b.s. and water from the fuel oil made in our cracking units. Our lines show only a small per cent and the blending oil contains a trace. When sampling the tanks after runs of 24 hours, it will show as high as 1.2 per cent b.s. and water. We do not heat our b.s. and water tubes in a bath for ten minutes before running and I have been told this makes quite a difference in results.—W. S. R.

While you have not mentioned the gravity of this fuel oil I presume that it is a heavy product and close to the gravity of water. Oils of this character should be examined with the greatest care and all precautions that have been suggested by the American Society for Testing Materials must be observed if reliable results are expected. The determination of water and sediment by means of the centrifuge is a convenient method and it is not considered difficult to obtain fairly accurate results when testing the lighter crude oils and low viscosity fuel oils, but difficulties enter with increasing weight and viscosity; especially with reference to the seperation of water. A more satisfactory determination of water may be made by the distillation test.

It appears that truly representative samples are not being obtained from your lines, for if they were, and all other conditions remained the same, the percentages found in the samples from the tanks and the lines would be comparable. Another consideration is the fact that the solid material does not rapidly seperate from heavy fuel oil in a tank and it is customary to use heat or add a lighter oil for the purpose of promoting settling. It may be that the blending oil used causes enough dilution and you are drawing the sample from a place where there is 1.2 per cent sediment.

The tubes, with contents, should be heated for 10 minutes before centrifuging as specified in the A.S.T.M. procedure, Test Serial Designation D 96-24, which follows.

"6. (a) Exactly 50 cc. of 90 per cent benzol shall be measured into each of two centrifuge tubes and exactly 50 cc. of the oil to be tested shall then be added to each. The centrifuge tubes shall be tightly stoppered and shall be shaken vigorously until the contents are thoroughly mixed. The temperature of the bath shall be maintained at 120 degrees Fahrenheit and the centrifige tubes shall be immersed therein to the 100 cc. mark for 10 minutes.

(b) The two centrifuge tubes shall then be placed in the centrifuge on opposite sides and shall be whirled at the rate of 1400 to 1500 revolutions per minute or the equivalent for 10 minutes. The combined volume of water and sediment at the bottom of each tube shall be read and recorded, estimating to 0.1 cc. if necessary. The centrifuge tubes shall then be placed in the centrifuge, again whirled for 10 minutes as before and removed for reading the volume of water and sediment as before. This operation shall be repeated until the combined volume of water and sediment in each tube remains constant for three consecutive readings. In general, not more than four whirlings will be required."

HELIUM FROM MONAZITE SAND

I am told that helium is found only in the United States in some natural gas and I wish to ask if it is ever found in any mineral?—L. R. H.

It is a peculiar fact that no natural gas has been found outside of the United States containing commercial quantities of helium. Traces of helium have been reported in the gas occurring in other countries but these quantities have been below 1 per cent which means that the cost of extracting and purifying this quantity would be excessive. We have recently learned that certain sands have been reported to contain helium in quantities which suggest possibilities for its extraction at a low cost.

A paper was presented before the Society of Chemical Industry, London, October 7, 1929, by R. Taylor on the separation of helium from a monazite sand found in India. The deposits of monazite in the United States, Brazil, and other places, have been of value especially for their content of rare earths, and one of these, thorium, is used in the manufacture of gas mantles. This author stated that 100 tons of the sand examined was estimated to contain approximately 100,000 quarts of helium. Experiments with small quantities of the sand heated under vacuum at 1,650 degrees Fahrenheit, furnished a gas having the composition shown in the table.

Helium From Monazite

	Per cent
Helium	34.5
Hydrogen	30.3
Carbon dioxide	24.3
Carbon monoxide	9.1
Hydrocarbons	1.7

The large scale operation provides for the purification of the gas as it flows from the furnace by passing it through hot iron tubes containing copper oxide. This treatment changes the hydrogen and carbon monoxide to water and carbon dioxide. The carbon dioxide being removed in a washing tower by means of a solution of caustic soda. Further purification of the crude helium is accomplished by passing it over magnesium which is heated to about 1,100 degrees Fahrenheit, for the removal of any nitrogen. Next it is passed over calcium which is heated to a little above 1,000 degrees Fahrenheit. It appears possible to obtain the purified gas from this sand by the method outlined at the rate of 5 quarts an hour. A product, as finally purified, was obtained showing a purity from 96.6 to 99.5 per cent helium.

CARBON BLACK AND AUTOMOBILE TIRES

I understand that carbon black is pure carbon but am told that the carbon black used in automobile tires for giving the black color breaks down and forms a gas which causes blisters and blowouts. Can you explain this and give me the percentage which is used?—A. T. E.

Carbon black is not pure carbon but is composed of carbon between 85 and 95 per cent together with small quantities of nitrogen, hydrogen and oxygen. The chemical composition of carbon blacks is given in Bureau of Mines Bulletin 192 and there is a discussion of its properties by C. R. Johnson in Ind. and Eng. Chem., Vol. 20, page 904, 1928; the material following is abstracted from this article.

One analysis of a high grade carbon black is:

Constituent—	Per cent
As received:	
Carbon	95.00
Hydrogen	0.85
Oxygen	4.15
After heating:	
Carbon	98.90
Hydrogen	0.37
Oxygen	0.73
Loss on heating	6.14
Moisture	1.35
Volatile matter	4.79
Water of combination	0.30
Per cent weight gases analyzed	4.49

Gas Analysis

	Volume	Weight
Carbon dioxide	14.53	1.178
Illuminants	0.16	0.030
Oxygen	1.15	0.071
Hydrogen	22.72	0.084
Carbon monoxide	54.45	2.805
Ethane	0.04	0.002
Methane	1.62	0.048
Nitrogen	5.33	0.275

The gas was obtained by heating the sample in a quartz tube to 1,751 degrees Fahrenheit.

Carbon black is used in tire treads for reinforcing purposes, in fact if it were not used the life of the tire would be considerably shortened. This author states that without carbon black in the treads of automobile tires, the annual tire bill would be increased over $500,000,000.

The quantity of carbon black in treads varies between 25 and 45 per cent. "Some technologists who have specialized on the problems in connection with solid tires for motor trucks have expressed the opinion that the cause of blowouts in solid tires is the evolution of gas from the carbon black." This author does not agree with the conclusion, because no gases are evolved from carbon black until a temperature is reached considerably above that occurring in solid tires when run under heavy load and high speed.

GRADES OF CAUSTIC SODA AND ALKALINITY

In what form is it possible to buy caustic soda? What is the standard per cent of pure alkali that should be present in caustic soda? What does 76 per cent caustic mean?—N. H. O.

The commercial forms in which caustic soda may be obtained are solid or fused, ground, flake and liquid. The first three forms are shipped in steel drums, with some shipments of the ground or powdered caustic soda being made in wooden barrels. The liquid form is a solution of caustic soda in water, containing approximately 50 per cent sodium hydroxide, which is obtainable in tank cars.

Pure caustic soda, that is 100 per cent sodium hydrate, contains 77.5 per cent actual alkali calculated as sodium oxide and this is commonly sold on a guarantee of 76 per cent. The impurities found in caustic soda include very small quantities of salt, sodium sulphate, magnesium, calcium, iron, and a trace of water. The total of these seldom exceeds 4 per cent and the best grades, such as electrolytic caustic, do not contain more than a trace of these substances.

It is well to remember caustic soda is sometimes sold on what is known in the trade as the New York and Liverpool test. This is a misleading way of stating the alkali content of caustic soda that has remained in use since the early days of the industry and appears to be based on an error in selecting the atomic weight of sodium at 24 instead of 23. The formula for caustic soda is NaOH, and for purposes of calculation this is stated as sodium oxide and water, or

$$Na_2O + H_2O = 2NaOH$$

Combining the approximate atomic weight of each element gives the molecular weights; sodium oxide 62, water 18, caustic soda 40. The 62 parts of sodium oxide and 18 parts of water combine to form two molecules of caustic soda, or 80 parts. Therefore, $\frac{62 \times 100}{80} = 77.5$ per cent. That is, pure caustic soda should contain 77.5 per cent Na_2O. In a similar manner the wrong figure for sodium will give an alkali content of 80 per cent, or the New York and Liverpool value is 2.5 per cent too high. As the determination of alkali is made on the basis of accurate atomic weights, the results may be reduced to New York and Liverpool value if multiplied by the factor 1.03226.

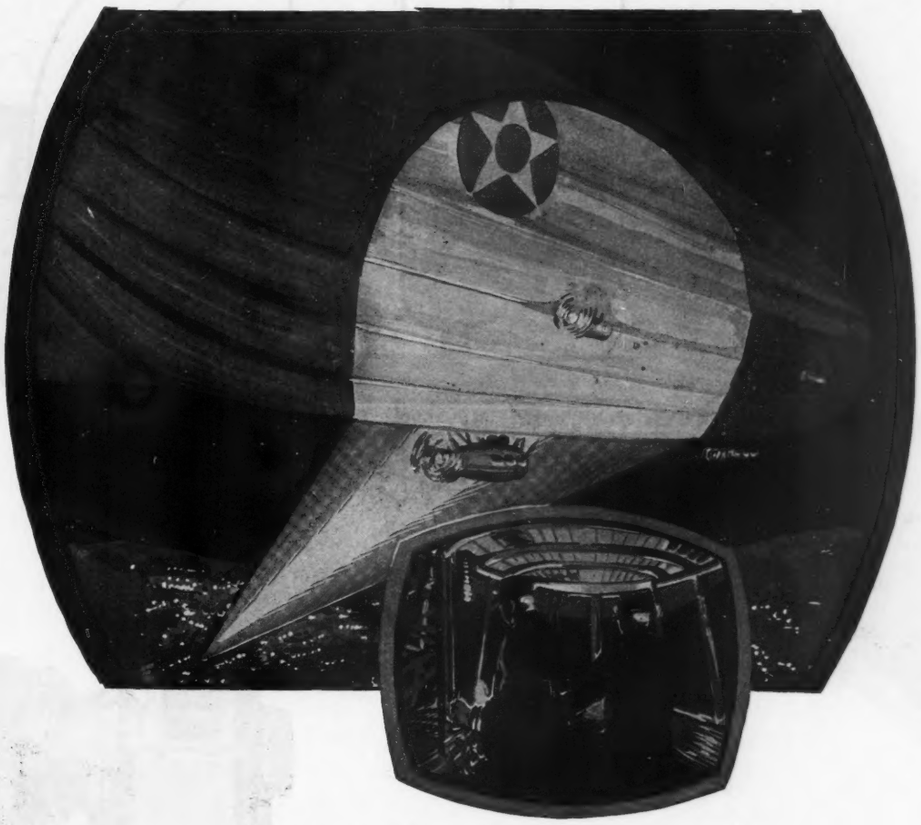
MERCAPTANS IN NATURAL GAS

I wish to obtain any available references pertaining to the organic sulphur compounds occuring in natural gas, not including hydrogen sulphide? The literature contains much concerning organic sulphur in petroleum but I have been unable to find any references relating to natural gas. Any information will be greatly appreciated.—E. G. H.

The literature contains numerous references to the presence of organic sulphur compounds, mercaptans, in various crude oils and these usually contain hydrogen sulphide. Garner and Miller, Chemical Composition of Natural Gas, The Oil and Gas Journal, June 16, 1927, page 137, state that "Natural gas which contains hydrogen sulphide, or organic sulphur compounds, is produced at Glasgow, Ky.; Olney, Ill.; and Findlay, Ohio. From some wells near Monroe, La.; lower Oriskany sand, Pennsylvania, (7,740 feet); and Gulf Coast and West Texas regions." Certain oils produced in Baku and those found in Persia have been reported to contain mercaptans. However, there is some doubt of the actual presence of mercaptans in crude oils but they are quite generally found in the distillates or in the products of petroleum which have been subjected to some heat treatment. On a similar idea the mercaptans may be expected to be found in natural gas, which has passed through a compressor and the heat of compression is sufficient to cause enough cracking for the formation of the mercaptans.

We cannot expect any large quantity of mercaptans to be present in natural gas as it comes from the wells, because the mercaptans are liquid at normal temperatures, the ethyl mercaptan boiling at 96.8 degrees Fahrenheit, for example Sometimes we find that gasoline made from natural gas contains mercaptans but it cannot be said that these compounds were present in the natural gas from which the gasoline had been extracted. Probably, as previously suggested, the molecular structure may have been disturbed during the extraction process and the mercaptans resulted from the decomposition.

BE SQUARE TO YOUR MOTOR



To-Day *for tomorrow*

The present high development of aircraft engines, planes and dirigibles has been made possible by hundreds and thousands of tests. Pioneering one design after another, engine after engine, change after change is responsible for the great feats of aviation that day after day startle the world and wake us to the realization of the dawn of a new era of transportation.

To meet this new demand of modern aircraft engines, Barnsdall has developed super AVIATION fuels and lubricants that protect these costly engines of the air and make possible maximum power with economy.

Refineries: BARNSDALL, OKMULGEE, WICHITA; *Sales Offices:* TULSA, CHICAGO, NEW YORK, ST. LOUIS, KANSAS CITY, ST. PAUL, LOS ANGELES.

BE SQUARE PRODUCTS

From Oil Well to Jobber

SUPER-GAS, the Anti-Knock non-poisonous motor fuel; BE SQUARE Gasoline; Naphtha; Furnace Oil; Gas Oil; Fuel Oil; BE SQUARE Motor Oils; Cylinder Stocks; Bright Stocks; Red and Pale Oils; Wax, and Petroleum.

All grades of Lubricating Oils.

BARNSDALL

The B REFINER

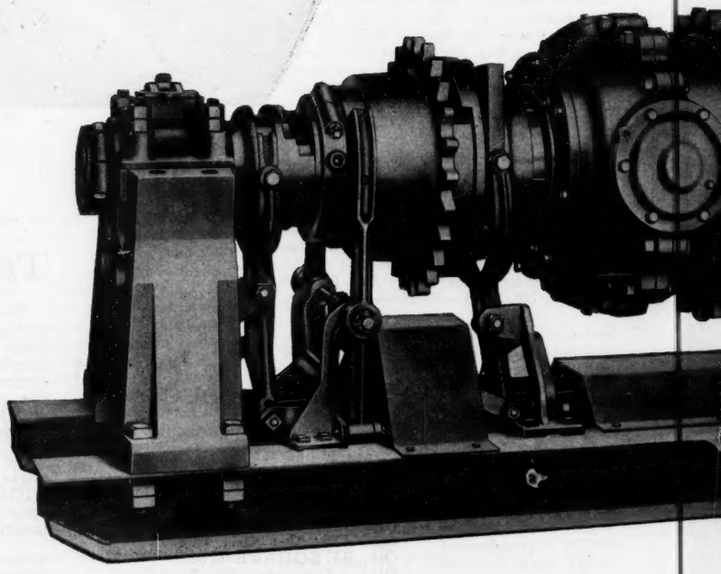
WORLD'S *First** REFINER

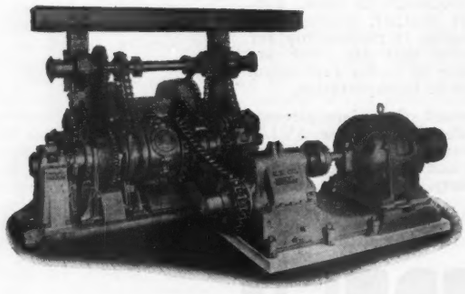
* In 1860, William Barnsdall, the father of T. N. Barnsdall, the founder of BARNSDALL, established the world's first oil refinery

HALLIBURTON DR

IES

Type





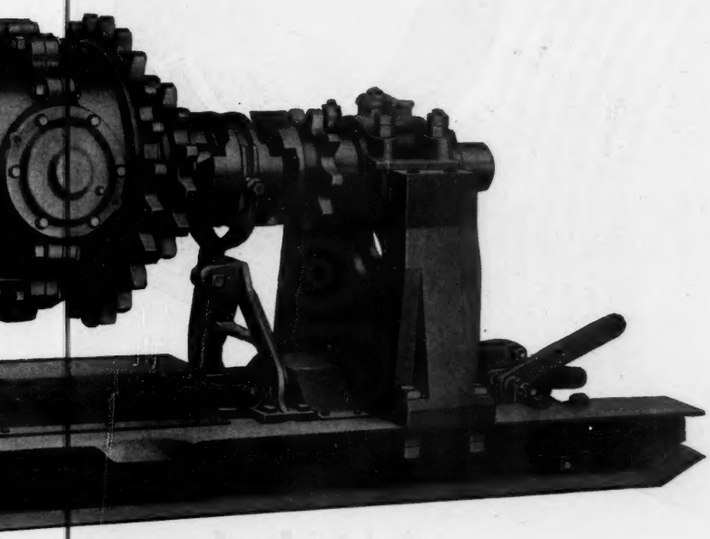
Electric Motor Drive

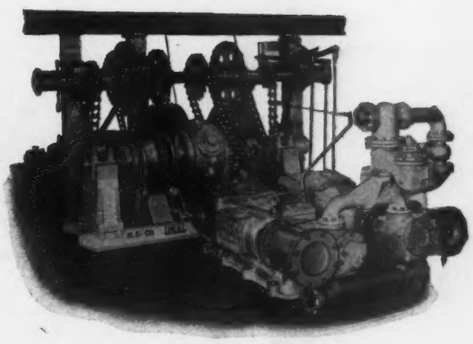
Descriptive B
No. 7
Sent on Re

THE
NATIONAL
COMPAN

RILLING CONTROL

pe "C"



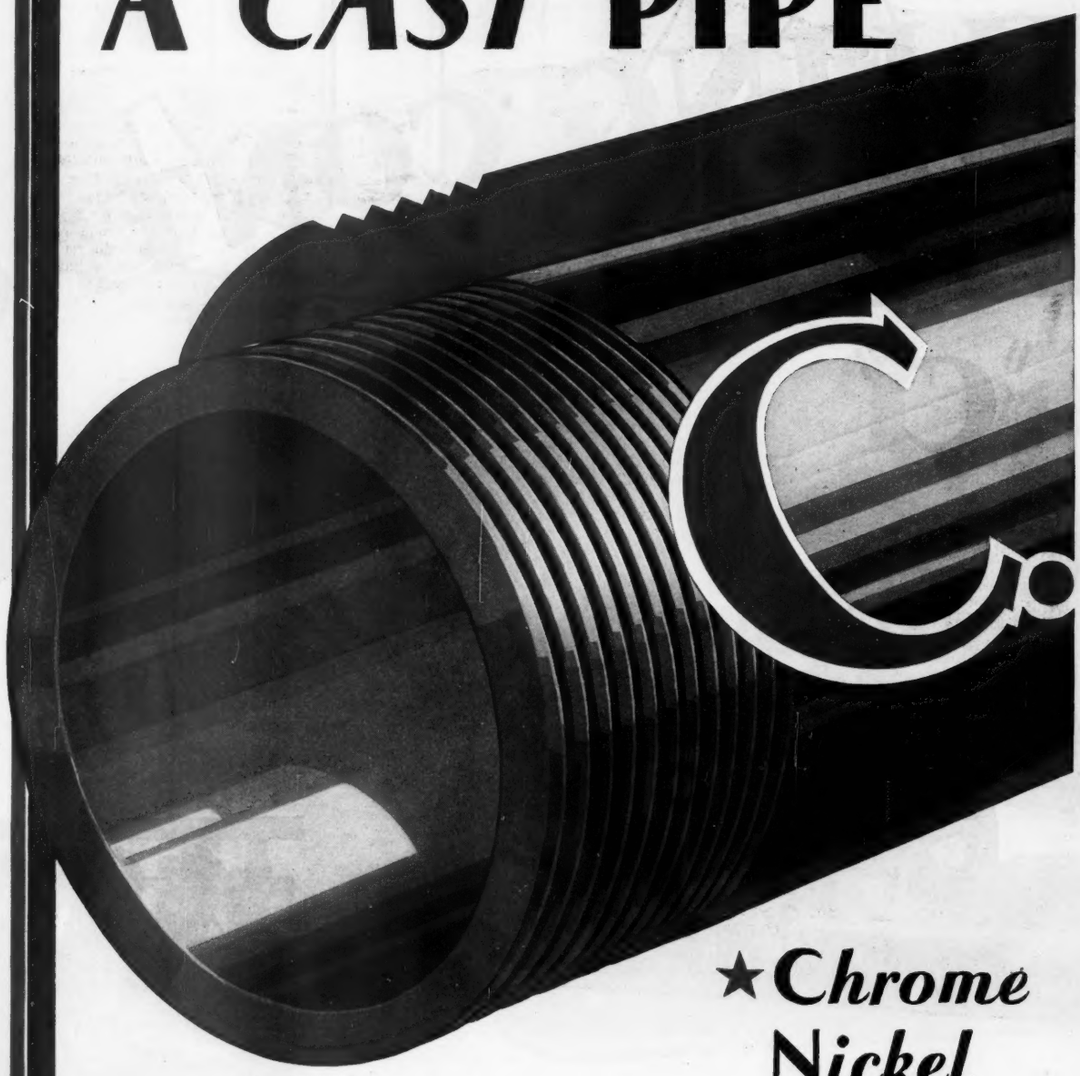


Steam Engine Drive

tive Bulletin
No. 70
on Request

THE
AL SUPPLY
IPANIES

A CAST PIPE

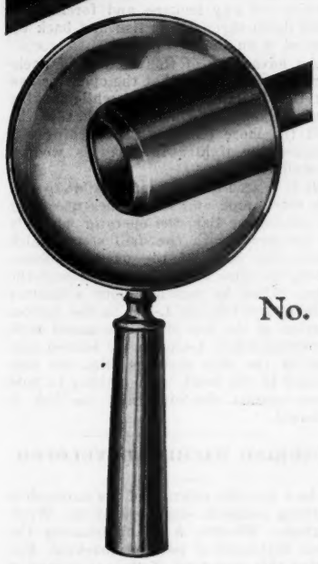


★Chrome Nickel Iron

No. 1	No. 2	No. 3
Beveled Ends	Threaded Ends	Grooved Ends
for	*for*	*for*
FIELD WELDING	SCREWED COUPLING	VICTAULIC JOINT

AVAILABLE IN 1½" — 2" — 2½" — 3" — 4" — 5" AND 6" SIZES

No. 1
With Beveled Ends *for* Field Welding



No. 1

WALWORTH C. N. I. pipe is made regularly in 5-foot lengths, but is also carried in stock in 20-foot welded lengths. It can be furnished in any reasonable length required. It is available in three types of ends, to suit your requirements—either *threaded, grooved* for Victaulic joints, or *beveled* for field welding. Fittings made of the same chrome-nickel-iron alloy are also available—both screwed and flanged.

All WALWORTH C. N. I. pipe is structurally the same—a seamless casting of close-grained chrome-nickel-iron, which is extremely tough and hard, and exceptionally stubborn in its resistance to corrosion.

Requests for further information about this product will be promptly answered by our Engineering Products Division, New York.

WALWORTH

Walworth Company, General Sales Offices: 51 East 42nd St., New York
Plants at Boston, Mass.; Kewanee, Ill.; Greensburg, Pa., and Attalla, Ala.
Distributors in Principal Cities of the World
Walworth Company Limited, 620 Cathcart St., Montreal, P. Q.
Walworth International Co., 11 Broadway, New York, Foreign Representative

REQUEST BLANK

Engineering Products Division
Walworth Company
51 East 42nd St., New York

Please send me information about C. N. I. Pipe. I am interested in pipe for the following service_____

_____

in these sizes_____

Name _____

Company _____

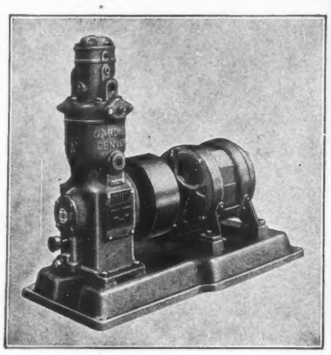
Address _____

EQUIPMENT AND SUPPLIES

GARDNER-DENVER HAS NEW AIR COMPRESSOR

A new two-stage air compressor of the vertical tandem type, to be known as the ABA, is being placed on the market by the Gardner-Denver Co., Quincy, Ill.

The new compressor weighs only 350 pounds and is designed to produce a con-



tinuous flow of 24 cubic feet of air per minute at pressures up to 500 pounds. The low-pressure head, high pressure cylinder and inter-cooler are combined in a single casting. This simplified construction reduces the number of parts to the minimum. Main bearings are of the Hyatt roller type. Lubrication is positive and automatic, being effected by a combination oil pump and splash system.

The ABA compressor can be furnished with pulley for V belt drive or for direct connection or electric motor, steam or gas engine. It is particularly suited for oil and gas engine starting and other services requiring small volumes of air at moderately high pressures.

The Gardner-Denver Co. manufactures air compressors, slush and mud pumps, high pressure drill steel forges, drill sharpeners and rock drills. Its two other plants are in Denver, Colo., and La Grane, Mo.

ENGINE RELIC FOR MR. FORD

Another relic of an earlier day has been acquired by Henry Ford for his museum in Dearborn, Mich. It is an old C. & G. Cooper Co portable, single-cylinder steam engine. Ford engineers, setting out to repair the engine for exhibition purposes, found that the governor was missing, but on the valve chamber, still in place, was stamped "1½, R. W. Gardner, patented August 14, 1874." Inquiry developed that the R. W. Gardner of 1874 is the present Gardner-Denver Co., of Quincy, Ill. The Ford company wrote this organization explaining the situation and adding: "It is our aim to reconstruct this engine, using all the old parts possible. Could you supply an exact duplicate of governor and valve, using the information and sketch inclosed as reference?" J. W. Gardner, president of the Gardner-Denver Co., and son of the founder of the concern, is having the parts made for Mr. Ford.

BUY PENN-JERSEY STEEL CO.

Joseph T. Ryerson & Son, Inc., have purchased the business, equipment, and stock of the Penn-Jersey Steel Co., of Camden, N. J., The Penn-Jersey company carries complete stocks of steel shapes, plates, sheets, hot and cold finished bars, reinforcing bars. etc. It serves industry and construction trades in the Philadelphia district with shipment from warehouse. The Ryerson company plans to add to the stock and increase the facilities.

NEW AIRCOACH DEVELOPED

The new Verville aircoach is a four-place semicantilever monoplane developed by the Verville Aircraft Co., Detroit, Mich. Alfred V. Verville designed his first airship in 1915 and the evolution in aircraft construction has been exemplified in Verville ships since that time. An exclusive feature of the new aircoach, developed by Mr. Verville, is the sponson stub on each side ot the fuselage and directly above the landing wheels. They form the ends of a lower crossmember of the frame and afford a fastening for the forward wing struts and the oleo shock absorbers of the landing gear. They also make practicable the 7-foot tread of the landing gear and they reduce parasite resistance.

BUSINESS NOTES

A. J. Brooks has resigned as sales manager of the Cincinnati sales division of the Vacuum Oil Co. to become associated with American Meter Co. in Albany, N. Y. Richard J. Clark, until recently general by-product foreman with the Consolidated Gas Co. of New York, has also become associated with American Meter Co. at the D. McDonald & Co. factory in Albany.

The Gardner-Denver Co., Quincy, Ill., has opened an office in Cleveland, Ohio, with C. C. Arnold in charge.

The Browning-Ferris Machinery Co. has opened an office in the Bedell Building, San Antonio, Tex., with G. Mitchell Deane in charge.

The Louisiana Oil Refining Co. has opened offices in San Antonio, Tex., at 1509 Smith-Young Tower, with E. H. Stafford and Will Burris transferred to that point.

E. D. Worley, formerly the Kansas representative for the Economy Pump & Oil Tool Co., has joined the sales department of W. C. Norris, manufacturer, with headquarters in Tulsa.

PERFECTS RED-D RUBBER MASK

Bullard-Davis, Inc., New York, manufacturers of first aid and safety equipment, has developed a new Red-D rubber face piece for its gas masks. The new Red-D rubber has an increased tendency to hold its shape. Its resistance to abrasion means greater wearing qualities. The exhalation valve is an important improvement of the mask. It is set at right angles well up under the chin and does not interfere with the head motion in any direction.

TRADE LITERATURE RECEIVED

The Southwestern Engineering Corp., of Los Angeles, Calif., with branch offices in New York, Tulsa and Montreal, has completed a bulletin on gasoline absorption plants. The company recently has made changes in its newer types of plants as regards apparatus and operation. Larger capacity units are built for manufacturers operating their plants on a more permanent basis. The new bulletin describes the Southwestern equipment for the natural gasoline industry in detail. Flow charts, pictures and operating data are given. The bulletin also describes the Southwestern installations for vapor recovery systems at refineries.

The National Lumber Manufacturers' Association has issued a special bulletin on the proper selection and uses of lumber in the oil industry. The bulletin outlines lumber specifications, etc., and presents a summary of tests of economical derrick leg construction. Working plans and lumber lists for 122-foot and 136-foot nailed wood derricks are given with the bulletin.

The Hutchison Engineering Works, Chicago, has prepared a circular in colors, describing its line of steam turbine generator sets.

A 16-page booklet, "Are Users Satisfied?" has just been published by the Bradley Washfountain Co., Milwaukee, Wis., manufacturer of lavatory fixtures.

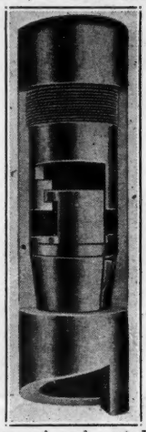
PRODUCTION SPEEDED UP BY TRANSPORTATION SYSTEM

To take care of the heavy transportation problem that presented itself with increased production of the H. C. Smith Manufacturing Co., Houston, Tex., gasoline trucks are employed to load the raw, semifinished and finished products through the plant. A demountable platform is provided so that the tractor frame may be run under the loading platform, pick it up and unload it at the next machining department without handling one piece of the material being finished.

Efficient and rapid transportation is an element in the modern production processes used by this company. Power loading and unloading, slow and high speeds, reverse and ease of control and operation help the tractor to speed up production.

MAKES RELEASING AND CIRCULATING OVERSHOT

The Vickers Machine Works, Smackover, Ark., is manufacturing and marketing the Vickers releasing and circulating overshot, invented and patented by R. N. Vickers. There are only four major parts; the top, bowl, guide and slips.



The method of packing off to obtain circulation is simple and effective. The slips are cut in halves and are held together by a spring steel retainer ring, which in going over the fish holds them snug against it, making it possible to stop and take hold at any point.

The bottom portion of the slips is tapered and seated on a tapered bowl. Just below the retainer ring, on the tapered portion of the slips, two triangular slots are cut on diametrically opposite sides. Into these slots is poured lead, this lead sealing the groove where the slips are split and also sealing the teeth of the slip on the inside, to keep the fluid from circulating through the lefthand thread in the slips. When a pull is taken the slips are forced to their seat in the bowl and the lead is driven by the force of the seat in the bowl against the pipe, cutting off any leakage and forcing the fluid down through the fish and back up around it on the outside.

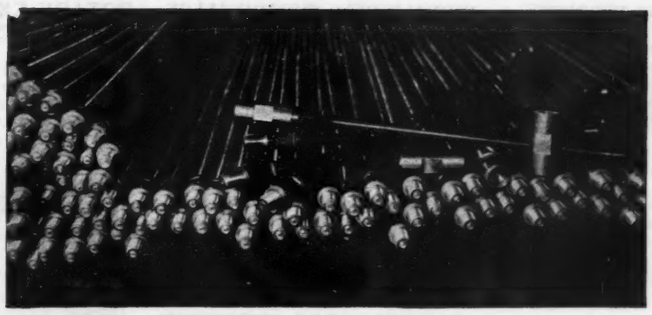
An advantage of this method of packing off is said to be that the operator can get the desired circulation while making a strain on the fish, and the harder the pull the more effective the packing off, because the tighter the lead is wedged around the pipe.

If it is seen that it is impossible to pull the stuck pipe and it becomes necessary to release the fish, the operator has only to set down with the drill stem, which forces the body of the overshot downward, the slips remaining set around the pipe. Then by making about a quarter turn to the left, an L-slot in the bottom portion of the top piece is engaged with a corresponding L-slot in the bottom portion of the slips and the slips are suspended in the bowl, with nothing to hold them against the pipe, and the fish is released.

PARKING MACHINE DEVELOPED

As a possible solution of the automobile parking problem, engineers of the Westinghouse Electric & Manufacturing Co. have developed a parking machine. Entering this new type of storage garage, a motorist can drive his car onto a platform, pull a lever, obtain a check and the car is automatically whisked upward out of sight. The device immediately places another empty platform at ground level, ready for another car. When ready to leave, the motorist can push a button corresponding to his check, and his car is delivered to him at ground level. This machine, according to H. D. James, the engineer who had charge of the development, can be built into old or new buildings or can be set up on small vacant lots.

National Tools & Metals, Inc., Torrance, Calif., is sending out a general catalog covering its line of hard set metals, oil field specialties and welding-rod equipment. The catalog is presented in an attractive binder.



—— by every test

Decidedly Best

For twenty years and more, D+B Sucker Rods have given outstanding service. This is particularly true of the D+B Heatreat Rod introduced about three years ago. Used in practically every oil field thruout the world, in the deepest and crookedest pumpers and under the most severe conditions, D+B Heatreat Rods head the list for endurance, resistance to fatigue and continuous pumping.

Write for Bulletin No. 6 DB.

D+B HEATREAT SUCKER RODS

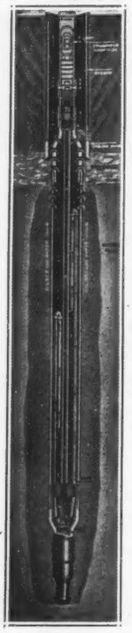
All Emsco and D+B Products (Except Derricks) Sold Exclusively in Mid-Continent Fields by The Continental Supply Company

EMSCO STEEL EQUIPPED WELLS ARE SAFE

EQUIPMENT AND SUPPLIES

SEPARATOR DESIGNED TO PREVENT CUT OIL

The Miller Combination Bailer & Pump Co. of Sapulpa, Okla., is manufacturing a new device, the Chancellor separator, designed to separate gas, sand and water from the oil at the bottom of the well. It is a positive gas anchor used below the working barrel at the bottom of the hole. The invention is the result of several years experimenting with various types of gas anchors by practical oil field superintendents.



The Chancellor separator is designed to prevent cut oil by keeping the gas out of the tubing and pumping the water separately from the oil by use of the perpetual siphon tubes. First a head of water, then a head of oil is pumped through the tubing, keeping worn barrel or cut cups from emulsifying oil and water.

The separator also has two sand traps as shown in the illustration, which catch the sand and keep it out of the working barrel. When the traps are filled with sand they can be flushed clean by pulling the lower valve, which has no gas anchor attached. More fluid can be pumped because there is always a full 1-inch stream to the lower valve. This feature makes it practical to use oversized valves.

The tubing is always full of fluid, which prevents paraffined tubing, saves stuffing box rubbers, polish rods, and other pumping equipment. The pumping time is reduced to a minimum by eliminating the pumping of gas.

There are two sets of perforations at the top, which break up gas heads and let the oil flow easily into the separator. Cavings from above cannot clog the separator as it is closed on top.

The separator is manufactured in lengths of 6 feet to 18 feet, with an outside diameter of either 4¼ or 4½ inches. The return siphon tubes are of three-quarter-inch inside diameter, and the center tubes are 1 inch in diameter.

ESTABLISHES DETROIT OFFICE

The Robert Bosch Magneto Co., Inc., established a sales office in General Motors Building, Detroit, Mich., in charge of Carl Dehn, Jr., manufacturers sales division, and of D. J. Wilber, trade sales division. Mr. Dehn for six years has been associated with the Chicago branch of the Robert Bosch organization as sales engineer. Mr. Wilber has been district representative of the company, covering Detroit and vicinity.

JACKSON OPENS NEW OFFICE

The Jackson Engineering Corp. has opened a district office in the Second National Bank Building, Houston, Tex., under the management of E. J. Hudson. The company specializes in heat exchangers, fractionating towers, cooling towers, gasoline plants and compressor stations.

LINDE TO EXHIBIT PRODUCTS

The Linde Air Products Co. and associated companies will exhibit at the New York Power Show, Grand Central Palace, December 2 to 7, inclusive, a complete line of welding and cutting equipment, including a full range of cutting and welding blowpipes. Prest-O-Lite acetylene and Linde oxygen, Union carbide and carbic in drums, and various welding accessories will be shown also. The exhibit will mark the first showing of the new Oxweld Type W-17 low pressure welding blowpipe.

MADE TO MEET DEMANDS OF INDIVIDUAL FIELDS

Nu-Alloy balls and seats, manufactured by the Petroleum Equipment Co., Fort Worth, Tex., are designed to meet the individual requirements of any given field.

Each pumping field has its own peculiar conditions, and Nu-Alloy balls and seats are reported to have been operating successfully in various areas.

Nu-Alloy noncorrosive steel is manufactured to the company's own analysis, machined in its own shop, and electrically heat treated in a modern electrical furnace. The outside and inside diameters of Nu-Alloy seats are precision ground to size. The ball is hand ground and lapped into its individual seat.

Through the use of a modern laboratory and research department it is possible for the company to reproduce in its plant the actual working conditions under which a ball and seat are to operate. This permits the development of a ball and seat for the particular job without speculating as to how the equipment will perform in the well.

MIDVALE BUYS CHROME ALLOY

The Midvale Co., Nicetown, Philadelphia, Pa., which has manufactured specialties, particularly high grade forgings and bars, announces its purchase of the Chrome Alloy Products, Inc. of Conshohocken, Pa., and its definite entry into the field of high grade chrome and chrome nickel alloy castings. T. Holland Nelson has been retained as consulting engineer to work out problems of construction which demand materials resistant to heat and corrosion.

DEVICE FOR REGULATING ENGINE SPEED INVENTED

An automatic idling device or throttle control for regulating speed of engine in Lincoln "Stable Arc" welders of the gasoline engine driven type has been perfected by the Lincoln Electric Co., Cleveland, Ohio. The device automatically increases the speed of the engine from normal idling speed to the proper speed for welding service whenever the arc is struck. When welding is discontinued, the device automatically reduces speed of engine to normal idling speed.

The operating mechanism consists principally of a small metal bellows and an electric magnet. When the arc is struck the armature of the electric magnet opens a relief valve in the bellows causing them to inflate, which in turn allows a coil spring to open the engine throttle. When welding operation ceases the bellows are deflated by suction of engine intake, thus causing the closing of the engine throttle to idling position. The idling device is provided with a control lever, which may be set for automatic throttle control, for continuous idling speed or for governed speed.

The device is so designed that a momentary interruption in welding will not cause a reduction in speed of the engine. It is estimated that the use of the automatic idling device will effect a saving in fuel consumption of approximately 25 per cent.

MARTIN LOWE GOES EAST

M. J. Lowe, Jr., of Blackwell, Okla., formerly of the Oil Well Supply Co.'s store in that city, has arrived in Bradford, Pa., to take up his new duties as manager of the Bradford store of the Oil Well Supply Co., succeeding Nat Carson, resigned.

ROTARY EXPERT JOINS IDECO'S ORGANIZATION

W. E. (Bill) Taylor, known as an expert on rotaries and rotary drilling equipment, is a new member of the growing Ideco organization. After graduating from the Colorado School of Mines, Mr.

Taylor as an engineer became interested in rotary drilling and he specialized in this type of production machinery. He goes to the International Derrick & Equipment Co. from the Frick-Reid Supply Co. His headquarters will be in the Ideco offices in Tulsa, where he will have charge of the sales of the Ideco-Boykin rotary equipment and other drilling and pumping machinery in the Oklahoma, Kansas and Rocky Mountain territory.

TRADE LITERATURE

The Guiberson Corp., Dallas, Tex., manufacturer of oil well specialties, is sending out price lists on all Guiberson tools to take the place of temporary lists mailed last July.

A bulletin describing hard-boiled hats and caps has been published by Bullard-Davis, Inc., New York, manufacturers of first aid and safety service equipment. The hard-boiled hat is a non-rigid hat for mine and industrial head protection. The average weight is 10 ounces. The hat is waterproof, fireproof, and nonconductive of electricity.

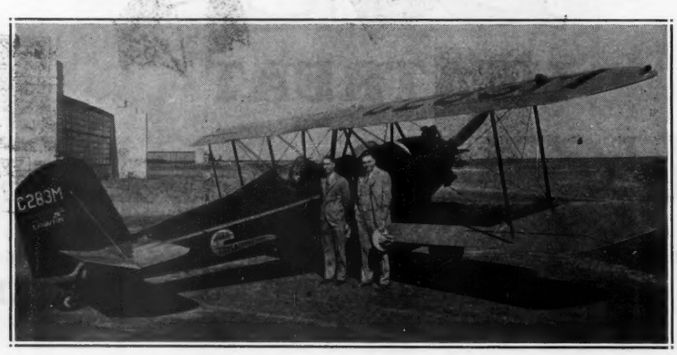
"Celite Filter-Aids" is the subject of an interesting 20-page booklet published by the Johns-Manville Corp., New York, explaining the uses of Hyflo Super-cel, Standard Super-cel and Filter-cel in filtration processes.

A loose-leaf folder containing specifications and price lists for protective pipe coatings is being sent out by the Hill, Hubbell & Co. division of the General Paint Corp.

"Automatic Control in a Modern Refinery," published by the Brown Instrument Co., Philadelphia, Pa., is devoted to flow meters, liquid level gauges, pyrometers, resistance thermometers, tachometers and other recording devices.

Products and publications of the subsidiary manufacturing companies of the United States Steel Corp., make up an interesting 52-page book being mailed from the offices of the corporation.

MURRAY TOOL & SUPPLY CO. PURCHASES AIRPLANE



The Murray Tool & Supply Co. of Cleveland, Okla., has purchased for business purposes a new Spartan C-3-165 airplane powered by a Wright "Whirlwind Five" motor. The ship was made by the Spartan Aircraft Co., Tulsa.

Left to right—Lee Hausinger, pilot; J. M. Murray, president of the Murray Tool & Supply Co. and A. J. Johnson, secretary and treasurer.

Get the dope ON THESE NEW H.C.SMITH Efficiency TOOLS

They are breaking all previous records for speed and efficiency in drilling, coring and underreaming. They are establishing a new efficiency in oil field operations. Send for descriptive folders and records of performance.

H. C. SMITH MANUFACTURING COMPANY, *Inc.*

Los Nietos, California

Branch Offices and Warehouses
Bakersfield, California Ventura, California

Cable Address: "Smithco, Whittier"

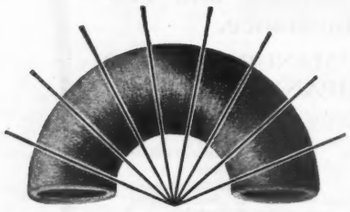
Oil Well Supply Co., *Exclusive Sales Distributors,* outside of California, for H. C. Smith coring equipment and demountable drilling bits.

The NEW H. C. Smith Type "C" Drilling Bit with Reamer Body.

The H. C. Smith Type "CI" Underreamer.

The H. C. Smith Type "C" Coring Outfit.

The NEW H. C. Smith Draw Works Brake Attachment.



Can Be **CUT** *to Make Any Required Angle*

TUBE-TURNS are seamless drawn fittings, forged by an exclusive process from any specified metal. No thinning or thickening of walls. True, circular cross-section. Radius 1½ times nominal pipe diameter. Non-porous. Strong and safe as the pipe in the line, and with the same co-efficient of expansion. Odd angles easily cut at the plant *or on the job*. Regularly stocked in 180°, 90°, and 45° Iron Pipe Sizes—Standard or Extra-Heavy—by the distributors listed below.

IF YOU have already discovered the advantages of pipe welding, *you will be interested in the further savings and improvements now made possible by TUBE-TURNS.*

Because of their definite, tangible superiorities over every other type of fitting, the sale of TUBE-TURNS has increased more than 500% in the past year.

The complete story of TUBE-TURNS—their advantages, economies, and specifications—is given in Bulletin 103. *It will pay you to write for the facts.*

Address: **TUBE-TURNS,** *Incorporated*
General Offices: **1252 Logan St., Louisville, Ky.**

CHICAGO: *110 S. Dearborn St.*
NEW YORK: *30 Church Street*
PHILADELPHIA: *Bourse Bldg.*

TUBE-TURNS

NO BUCKLING OF INSIDE WALL — NO THINNING OF OUTSIDE WALL

The Stock Fittings For Pipe Welding

DISTRIBUTORS: *Baltimore, Md.*, The Heat and Power Corp. . . . . *Cambridge, Mass.*, Baker Supply Co. . . . . *Cleveland, O.*, M. S. Maleson Co. *Detroit, Mich.*, C. E. Phillips and Co. . . . . *Houston, Tex.*, Maintenance Engineering Corp. . . . . *Los Angeles, Cal.*, Buck and Stoddard . . . . *Pittsburgh, Pa.*, Herr-Harris Company . . . . *St. Louis, Mo.*, H. A. Woodworth Engineering Company *Toledo, O.*, Mason Equipment Co. . . . . *Tulsa, Okla.*, The Moorlane Company . . . . *Honolulu*, Hawaiian Gas Products, Ltd.

ECONOMICALLY PROPORTIONING CONCRETE FOR OIL FIELD USE

By Walter H. Meier
Engineer Atlantic Oil Producing Co.

Concrete is now generally used by most all oil field operators for foundations because of its firmness and durability. Apparently it is not generally known or accepted that satisfactory concrete can be made from almost any hard, durable and clean aggregate available to the job if properly proportioned with cement and water and the whole sufficiently mixed. Concrete having a compressive strength of 1,000 pounds per square inch in 7 days and 2,000 pounds per square inch in 28 days is sufficiently strong for almost any foundation required in the oil fields, but using such arbitrary proportions as 1:2:3½, 1:2:4, 1:3:6, etc., as is common practice, may give strengths considerably above or below this amount and are generally uneconomical.

Before adopting any arbitrary proportions of graded aggregate, have an examination and test made of any local deposits of sand, gravel, conglomerate and rock; first, to determine if suitable for concrete, and second, what proportions will make concrete of the desired strength at least cost. Any concrete engineer, testing laboratory or cement manufacturer will make the examination and test for a very reasonable fee and this charge will usually be returned many times in the saving made by the economic proportioning of materials. If a local aggregate is known to be suitable for concrete and time does not permit sending samples to laboratory for testing, the proper proportions to be used can be easily determined in the field by the methods described in a booklet entitled "The Design and Control of Concrete Mixtures," which is published and distributed by the Portland Cement Association. This booklet will be of great assistance to the field man in producing good concrete and should be obtained.

If proportioning is done in the field, samples of the concrete, as it comes from the mixer, should be tested for strength at the end of 28 days as a check on the field proportioning.

Actual Experiences

The following actual experiences in using local materials for concrete are cited to show the tremendous savings that may be made by properly proportioning a local aggregate than if a graded aggregate is obtained and arbitrarily proportioned:

1. In a West Texas field, the nearest coarse aggregate is 28 miles distant and roads in poor condition. Three 25-pound samples of a dune sand that practically covered the entire surface of the oil field to a depth of several feet were expressed to a concrete engineer for examination and testing. He found that this sand proportioned 1:2 and 1:2½, and using no coarse aggregate, would make very good concrete for engine, derrick and rig foundations. The strength tests on actual field samples of this concrete as it came from the mixer as follows:

Cyl. No.	Mix	Mixing water gal per sack of cement	Slump inches	Age at test days	Total pounds	Lbs. per sq. in.	Remarks
A	1:2	5	..	30	71,420	2,550	Same as used in upper part of foundations and floors.
B	1:3	6	..	30	40,270	1,438	Same as used in the bottom of foundations.
B–1	1:2½	8	..	3 mos. and 11 days	86,500	3,090	Taken at countershaft foundation.

Mixing time: One-half minute dry and two minutes wet.
Absorption test on cylinder gave 5:15 per cent absorption.

The cost of the above examination was $50. The saving by not hauling or using the coarse aggregate amounted to $325 for each derrick and rig foundation and about $165 for each engine foundation, although the amount of cement used was more than twice that required if the coarse aggregate had been used.

2. In an Oklahoma field, near Seminole, a large gravel pit was found near a lease on which development was to start immediately. Several 25-pound samples of this material was sent by express to the manufacturer furnishing the cement, who examined and tested them with the following results:

SIEVE ANALYSIS

Sieve (in.)	Retained (%)	Coarser (%)	
¾	11.3	11.3	
⅜	22.4	33.7	Fineness modulus
4	14.9	48.6	4.73
8	8.8	57.4	Passing 100 mesh
14	6.5	63.9	2.6%
28	7.9	71.8	Clay and silt
48	17.3	89.1	4.8%
100	8.2	97.3	

CONCRETE

Mix 1: 5.2. Water 7.9 gallons per sack of cement. Batch for nine 6 by 12-ft. cylinders.

	Pounds
Gravel	208
Cement	40
Water	28.5

COMPRESSION TESTS

Age	Total load (lbs.)	Lbs./ sq.in.		
3 days	36,640	1,309		
	37,010	1,322	1,337	lbs./sq. in. ave.
	38,680	1,381		
7 days	52,590	1,879		
	48,750	1,741	1,793	lbs./sq. in. ave.
	49,250	1,759		
28 days	81,820	2,922		
	82,570	2,949	2,946	lbs./sq. in. ave.
	83,100	2,968		

Field Use Proportions

As soon as the three-day results were obtained, the following proportions of cement and bank-run gravel were recommended and adopted for field use:

1:5¼ mixed two minutes with 7¾ gallons water.

By using the bank-run gravel for concrete aggregate in the above proportions, instead of separate fine and coarse aggregate arbitrarily proportioned 1:2:3½, a saving was made of approximately $3.60 per cubic yard on teaming and cost of aggregate, plus two sacks of cement per cubic yard, or $135 per derrick foundation.

These two examples are typical and indicative of the large savings that can be made by using suitable local materials and economically proportioning them for concrete aggregate. The Portland Cement Association, which has a representative in every large city, or any cement manufacturer will glady co-operate with and assist the contractor or operator in making economical concrete.

KENTUCKY-TENNESSEE

(Continued from Page 78)

County, in the Jett sand, but will drill the well to the Jones sand.

According to the Breckenridge News, oil operators are actively engaged in the vicinity of Cloverport, where several locations will be drilled as soon as weather conditions permit. This is in Breckenridge County, to the east of the Hancock and Ohio County fields.

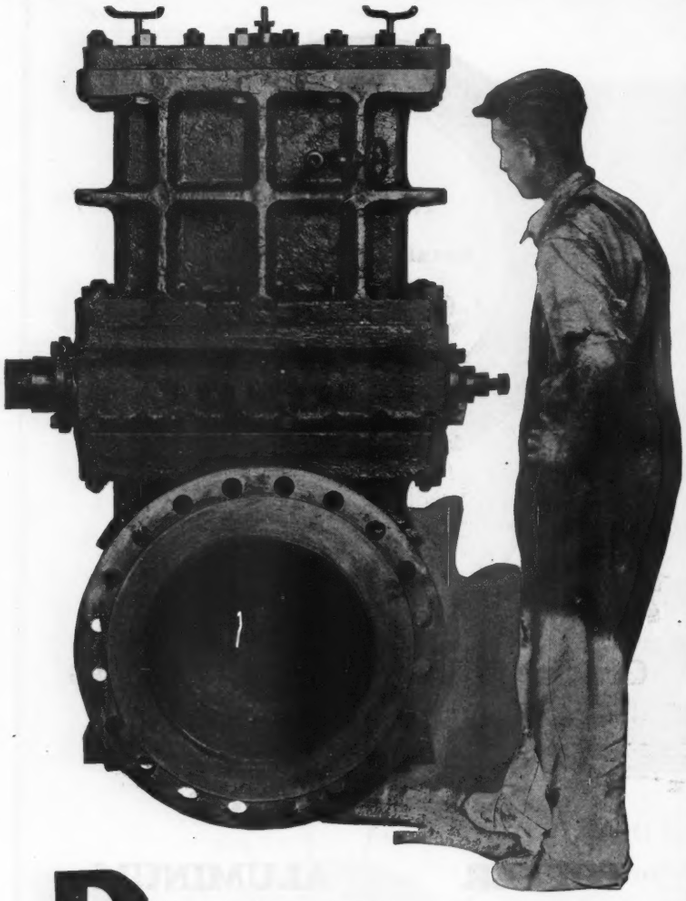
The Cracker Oil & Gas Co. is a recent organized concern, which will test out a 200-acre lease in Floyd County, in the eastern part of the State.

According to reports of the Cumberland News, Burksville, the county seat, will soon be supplied with natural gas for heating and lighting purposes. Cumberland County is one of the earliest fields in the country for both oil and gas.

Hardin County, which lies south of Meade and Breckenridge Counties, has quite a future so far as both oil and gas are concerned, as there are some very nice structures over the county, especially north of Elizabethtown, which is

McKIM
Metallic - Asbestos
GASKETS
for
Cracking Units Refineries
Gas Engines Compressors
Pumps Vapor Lines
Crane Flanges, etc.
COPPER ALUMINUM
ARMCO MONEL
McCord Radiator & Mfg. Co.
DETROIT
Everywhere a Good Gasket Is Required

OVER 11,000 IN USE



BIG BOY!

A Special Robinson Job!

THREE of the largest Robinson Extra Heavy Steel Orifice Fittings ever made have just been completed for the Pacific Gas & Electric Company. They will be used on the company's famous Buttonwillow — Kettleman Hills — San Francisco line. Weight each, approximately 3200 lbs. Size, 16 in. Working pressure, 600 lbs.

U. S. Patent No. 1569303

ROBINSON ORIFICE FITTING CO.
1435 SANTA FE AVENUE, LOS ANGELES, CALIF.
Distributors
The Foxboro Company . . Westcott & Greis, Inc.
English Distributor
Walker, Crosweller and Company
54-58 Queen Elizabeth Street, London, S. E. 1

ROBINSON ORIFICE FITTING

known as one of the largest structures in the State, and said to be close to 45 miles long. The area is to get a very important test as R. E. Young has made a location on the Clarence Leonard farm between Salt River and Camp Henry Knox. The Louisville Gas & Electric Co. is open for all the gas that can be found in that area.

Hupp and Duff are also getting territory in Hardin County, as are McMahan and Combs of Owensboro. The Petroleum Exploration Co. also holds leases on a large acreage in Hardin County.

The United Carbon Co. is drilling an important test on the Wade Cassaly land, on Lick Branch in Pike County, in the eastern part of the State, where the company controls about 60,000 acres. This company will drill four tests.

Snowden-McSweeney interests are reported to have in a well on the Hoover heirs' farm, a short distance to the southwest of the Barnetts Creek Pool, in Ohio County and southwest of Taffy, that is showing for a fine stray sand producer equal to those found in the territory surrounding the Church lot, where the discovery well was found by R. W. McMahan some months ago.

Ellis and Young's No. 2, on the Preacher Woodson farm, on which Rice Brothers hold the mineral rights, which looked bad a few days ago, has been shot and cleaned out and reported showing for a good well. This adds another producing well to Muhlenberg County.

The Ohio Oil Co. is putting up a 3,000-bbl. storage tank at Luzerne, where oil from its wells in the Greenville Field will be stored awaiting shipment by tank cars. When this tank is completed, the company will be able to pump its wells to capacity. Several new wells are scheduled to start in the Greenville Field as soon as some now drilling are completed.

OXWELD ACETYLENE CO. WINS FIRST PLACE IN ADVERTISEMENT CONTEST

The page advertisement of the Oxweld Acetylene Co., reproduced here, which appeared in the March 21 and June 13, 1929, issues of The Oil and Gas Journal, was awarded the trophy for the best individual trade paper advertisement in the entire exhibit of trade paper advertisements held in connection with the annual convention of the National Industrial Advertisers Association, in the Hotel Gibson, Cincinnati, Ohio, September 30, to October 2. The donor of the trophy was the Penton Publishing Co., Cleveland, Ohio.

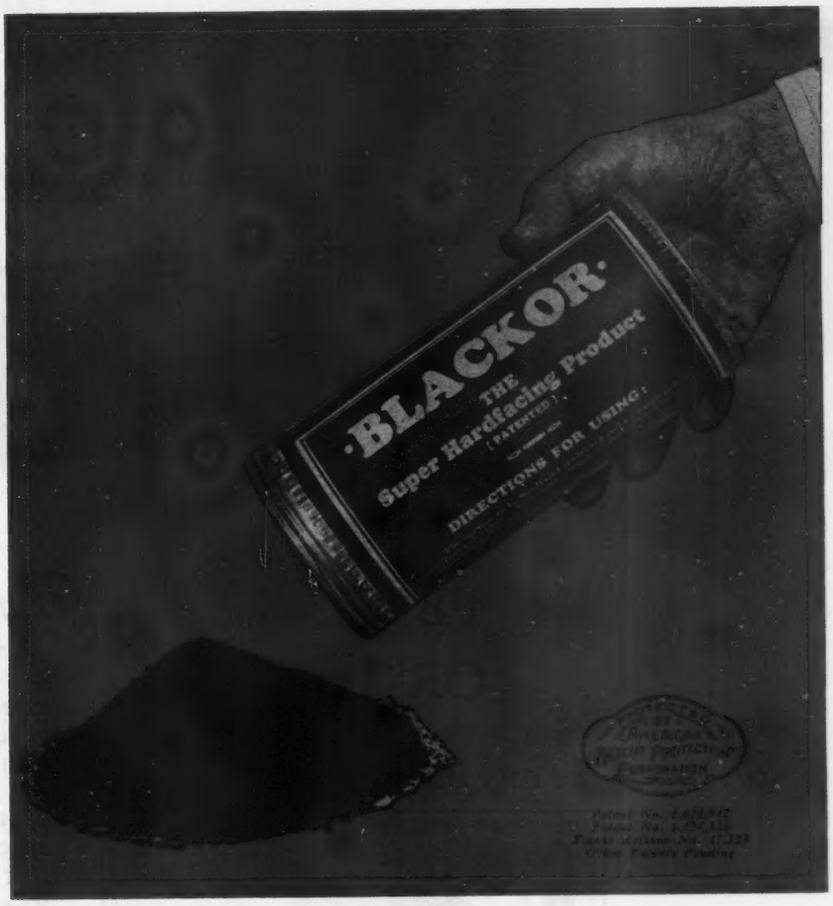
In addition to this award, six advertisements of the current series on Prest-O-Weld welding and cutting aparatus, won second prize in the contest for the best series of not less than six advertisements featuring performance. The donor of this award was the Iron Age.

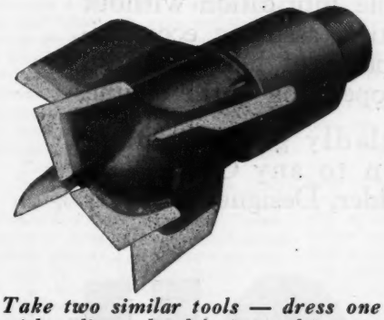
The convention was attended by several hundred industrial advertising executives from all sections of the country. Over 190 panels, each bearing from 10 to 18 advertisements were exhibited, the largest industrial advertisers and advertising agencies in the country participating. In discussing the advertisements exhibited, the judges also commented favorably on the series of the Haynes Stellite Co., and a series of six advertisements on the Electro Metallurgical Sales Corp.

The prize-winning single advertisement in addition to all the other series of advertisements mentioned, was prepared by the Technical Publicity Department of the Union Carbide Co., under the supervision of T. C. Fetherston, manager, and V. H. Vandiver, who had charge of the actual preparation of the copy.

2 THE OIL AND GAS JOURNAL Thursday,
"Oxweld carries on when the others quit . . ."
A STUDENT engineer characterizes the above phrase as "my simplest way of expressing the reason for my choice of Oxweld equipment as being superior to others." This young man had just completed his curricular requirement in oxy-acetylene welding and cutting at a prominent engineering school. Ninety-two per cent of his classmates also chose Oxweld.
There is a similar marked preference for Oxweld in industry. The reason is economic. Oxweld blowpipes, embodying the Oxweld low-pressure injector principle, give more welding, more cutting, more hours, months and years of operation. They carry on when the others quit.
Reliable—Economical—Long-Lived
Typically Oxweld
OXWELD
WELDING AND CUTTING APPARATUS AND SUPPLIES
OXWELD ACETYLENE COMPANY
Unit of Union Carbide and Carbon Corporation
NEW YORK Carbide and Carbon Bldg.
UCC
CHICAGO Peoples Gas Building
SAN FRANCISCO Adam Grant Building
STOCKS IN 38 CITIES

All facings are hard but Blackor is Hardest!





Take two similar tools — dress one with ordinary hard-facing and inserts. Dress the other with Blackor. Keep a record of life of tool in hole. You'll sell yourself on BLACKOR.

HARD facings in general have prolonged the life of drilling tools. But Blackor goes several steps further and is the hardest facing material known. In addition to its super hardness, Blackor is applied solidly over the entire abrasion surface...leaving no voids, no "in-between" spots to wear away. Blackor interlaces with the steel to which it is applied...won't chip or break off. Blackor costs less...is applied easily...and prolongs the life of drilling tools wherever used. Ask for a trial 5-lb. shipment and put Blackor to the test.

BLACKOR COMPANY

Head Office: 215 West 7th St., Los Angeles, Calif.

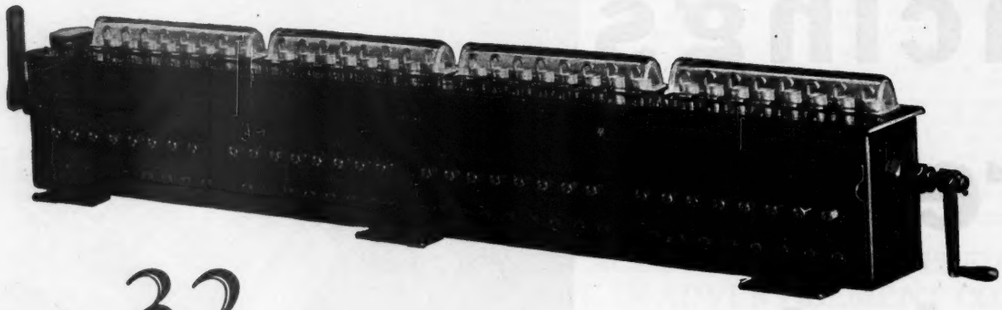
New York Export Office: 39 Cortlandt Street

Tulsa, Oklahoma Office: 410 Mid-Continent Bldg.

BLACKOR

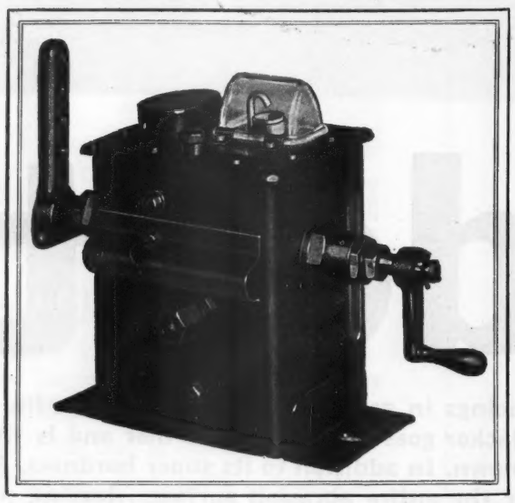
The Super Abrasion-Resistant Facing

all over the world Madison-Kipp Lubricators are leading



32 FEEDS OR 1 ◆ ◆ ◆ ◆ ◆

or any intermediate number



Fourteen different drives from ends, sides or bottom. Applicable to every type and design of Diesel or other Oil or Gas Engine.

MADISON-KIPP LUBRICATORS are easily applied in the field on Oil, Gas, Steam Drilling Engines, Oil, Gas Pumping Engines, Compressors, Steam Pumps, Stationary Power.

MADISON-KIPP Lubricators are available for every type and design of Diesel, Oil or Gas Engine. They are furnished assembled, in a range from 1 to 32 feeds, and with 14 different drives from ends, sides or bottom as specified.

Many years' experience with these Engines have proved the soundness of the Madison-Kipp principle: Fresh Oil in exactly the right quantities, delivered to the cylinders by the Kipp System of registering ports during several complete strokes of the piston past the oil injection point, reduces wear to the minimum and lengthens the life of the engine accordingly.

Madison-Kipp metering accuracy assures ample lubrication without over-lubrication, assuring economical consumption of lubricating oil and proper operation of the engine.

We will gladly give complete information to any Oil or Gas Engine Builder, Designer or User.

FRESH OIL

Madison-Kipp Lubricators

Lubrication Specialists Since 1898 *Madison, Wisconsin U.S.A.*

DETERMINATION OF GEOTHERMAL GRADIENTS ON OIL STRUCTURES

Reporting on the progress on Project 25, Determination of Geothermal Gradients in Oil Fields on Anticlinal Structure, the American Petroleum Institute research division says:

Oklahoma

During the past year 92 wells were tested in the following fields:

Healdton, Carter Co.	4 wells
Seminole, Seminole Co.	8 wells
Wewoka, Seminole Co.	3 wells
Cromwell, Seminole Co.	10 wells
Eldorado, Kans., Butler Co.	20 wells
Tonkawa, Kay Co.	11 wells
Walters, Cotton Co.	4 wells
Oklahoma City, Oklahoma Co.	3 wells
Davenport, Lincoln Co.	1 well
Okemah, Okfuskee Co.	4 wells
Glenn Pool, Tulsa Co.	19 wells
Sasakwa, Seminole Co.	1 well
Papoose, Okfuskee Co.	4 wells

Of the 13 fields in which tests have been made, only two of the fields have failed to show a tendency for the isothermal surfaces to coincide with the geologic structures of the fields. In one of the fields, Wewoka, where the relation did not seem to exist, only two wells were available in the field proper for making temperature tests. Consequently, the data here are not extensive enough to be conclusive. In the other field, Tonkawa, where the relation did not seem to exist, 11 wells were tested but the data could easily be questioned when the history of the field was considered. It is planned to make more tests in the Wewoka Field.

One of the most outstanding facts in connection with earth temperatures in Oklahoma is the apparent agreement of dip of the isothermal surfaces and the formations across east central Oklahoma.

The reciprocal gradients vary widely from area to area in Oklahoma, but show small variations within the same area. The lowest gradient found in a well to date was at Healdton, 1 degree Fahrenheit in 149 feet; while the highest gradient was found in a well in Glenn Pool, which was 1 degree Fahrenheit in 36½ feet.

Tests have ben made in two fields: Haverhill, Kans., and Glenn Pool, Okla., which produce from sand lenses. Data collected to date in these two fields indicate that the temperatures are higher at corresponding depths in wells located in the producing area than in wells located outside the producing area.

Texas

Owing to the variety of structural conditions in Texas and to the wide range in age and character of the geologic formations into which oil wells are drilled, this state constitutes an excellent area in which to collect earth temperature measurements for the purpose of testing out geothermal theories.

Temperature measurements were obtained from wells in producing oil fields and wildcat areas in all parts of the State. The following fields were investigated in detail: Lytton Springs, Big Lake, Humble Salt Dome, Blue Ridge Salt Dome and Long Point Salt Dome. A number of temperature measurements were made also at Pierce Junction Salt Dome and in the Luling, Mexia, and Powell oil fields. Wildcat wells were tested in North Central Texas, Southwest Texas, West Texas, Northwest Texas, and southeastern New Mexico. A complete report on the results of the work has been submitted to the American Petroleum Institute.

The temperature measurements made in Texas, where water is present in the subsurface strata, show abnormal rate of increase of temperature with depth on the tops of the anticlines or domes, as contrasted with the rate of increase in holes located on the edges of these structures or at some distance from them. The relationship between the normal rate of increase of temperature and the structure is especially noteworthy in salt domes and in anticlinal structures carrying much underground water. Abnormal structures without water, as for example the shallow strata at Big Lake, Reagan County, and the Lytton Springs structures in Bastrop County, show no abnormal rate of change in temperature with depth.

Temperature measurements obtained in salt domes were especially interesting. In the Humble Salt Dome, Harris County, for example, the following results were obtained:

1. At equal depths beneath the surface, temperatures are higher on the top of the dome than on the flanks.

2. Rate of increase in the temperature with depth is relatively greater on the top of the dome than on the flank.

3. This difference in temperature at the same depth and this greater temperature gradient on top of the dome are found not only near the salt but also above the salt, as near the surface of the ground as it is possible to make temperature measurements, i. e., at depths of 100 and 250 feet.

4. Drill holes on top of the salt domes have approximately the same temperatures at equal depths, so that the isotherms over the top of the dome show an almost horizontal plane of equal temperature, which bends downward over the edges of the salt plug.

The results of all these temperature investigations lead to the belief that a definite relationship exists between rate of change of temperature with depth and the structure of the strata in which temperature measurements are made. In domes where water is present in the sub-surface strata, the rate of change of temperature with depth is greatest in the holes located highest on the structures and least in those holes located in the syncline. The reason for this abnormal rate of change of temperature is not fully understood. It is believed that the presence of water in the strata is a controlling factor. A subsurface stratum of water appears to be able to maintain by circulation a more or less uniform temperature over the area it occupies. After the water layer is bent up by earth movements into a dome, it tends to maintain, in part at least, the temperature belonging to it in its greater depth. Hence a more rapid rate of increase in temperature per foot of depth characterizes the axis of a dome simply as the result of elevating a warmer layer, which can maintain its warmth through liquid circulation.

Santa Fe Springs Field

Fourteen wells were measured in this field, bringing the total number tested to 33. Lack of suitable wells and deep drilling activities made it impractical to continue work in this area. A final report of the results has been submitted as a preliminary draft for publication. The following conclusions were drawn from the computed data:

a. Depth temperature relations are characteristically irregular as compared with other fields. Some of the irregularities can be traced to antecedent conditions such as recent production, etc. Others seem to be the result of natural rock conditions inherent to this area.

b. Shallow temperatures vary within rather wide limits. Temperatures at a 100-foot depth range from 65.9 degrees to 74.9 degrees Fahrenheit. Low or high values are characteristic of certain areas in the field. This suggests that some agency, such as circulating ground water, governs the shallow temperature conditions.

c. The elevations at which a temperature of 100 degrees Fahrenheit occurs define an irregular isothermal surface. A smooth surface, conforming approximately with these elevations, shows a rise of about 300 feet from northwest to southeast, and in contour corresponds partially to the structural contours.

d. Reciprocal gradients, computed over the depth interval 100 to 2,000 feet, vary from 47.5 to 56.6 feet per degree. They are irregular, and do not present a consistent variation with the structure. In

Impossible?

We'll tackle it!

'Phone us at two-thirty in the afternoon for a couple of cars of standard size pipe — you can't stump us! Your order will be loaded and on the way next morning. Then our tracer-service will follow the shipment all the way to you, to insure prompt delivery.

Orders for unusual sizes and lengths of pipe, special threads and couplings, or any out-of-the-ordinary requirements are welcomed as a stimulus to the efficiency on which we pride ourselves.

Oil and gas men all over the continent know they can obtain pipe for all needs from us. Ample stocks of standard sizes are carried at Wheatland, Pa., St. Louis and Tulsa.

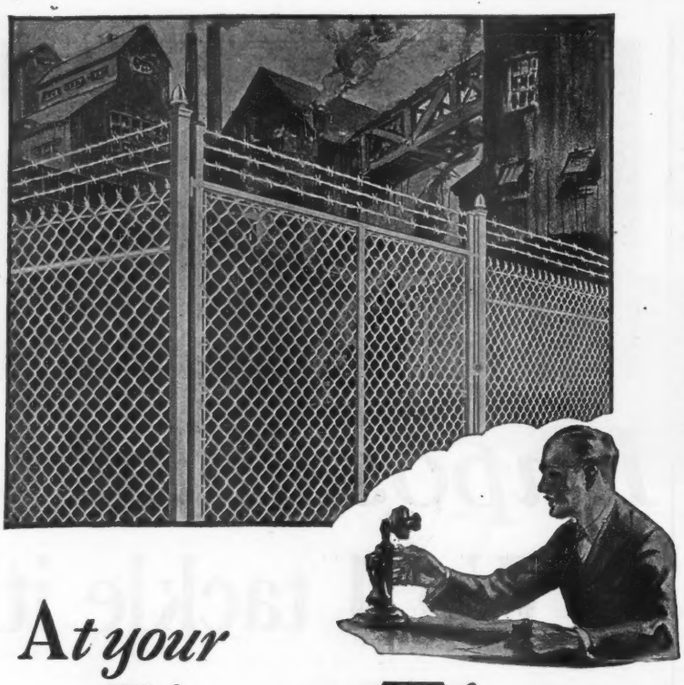
Write, wire or 'phone for prices on any job.

ODEE PIPE FOR GAS LINES

ODEE pipe for gas lines is serving hundreds of companies.

Jos. GREENSPON'S Sons
IRON & STEEL COMPANY
St Louis Tulsa New York City Wheatland, Pa.

GREENSPON'S
PIPE FOR ALL PURPOSES



At your
Finger Tips
..Anchor Fencing Service

THROUGHOUT the oil country Anchor Service Stations are located —each one ready to "get on the job" without delay.

When you want competent advice or information about fencing — get in touch with the Anchor Fencing Specialist near you. He *knows* fencing, and his trained erection crews assure you of fencing — done *right*, quickly and economically.

For a catalog or fencing service phone or write the nearest Anchor representative listed below.

Anchor Fences are made in types suitable for oil field lease camps, tank farms, refineries, pipe line pump stations and other oil industry properties.

ANCHOR POST FENCE COMPANY
Eastern Ave. & Kane St., Baltimore, Md.

Divisional Sales Offices:
New York, N. Y. 9 East 38th St. Cleveland, Ohio 21500 St. Clair Ave. San Francisco, Calif. 460 Fifth St.

Sales Agents:
Tulsa, Okla.—Dresser & Gorton, Inc., Mayo Bldg.
Houston, Tex.—The DeBaun Co., 2112 2nd National Bank Bldg.
Los Angeles, Calif.—J. E. Dwan, Inc., 616 S. Anderson St.
Shreveport, La.—R. M. Spurlock, 3306 Line Ave.
Branch Offices and Sales Agents in other cities. Consult Telephone Directory

ANCHOR Fences

A NATION-WIDE FENCING SERVICE

general, the values show an increase rather than a decrease as the crest of the structure is approached.

e. Reciprocal gradients, recomputed over the same depth interval, after eliminating certain abnormal temperatures, show a less pronounced irregularity. However, anomalies between adjacent wells are still evident, and a persistent increase or decrease of the values with the structure is absent.

f. The lack of a satisfactory relation between geothermal conditions and structure in this field may be attributed primarily to three factors, viz., the variation of the gradients within the narrow limits of only a few feet per degree of temperature, the unusual conditions of development and production involving the very close spacing of wells and the flow of large quantities of gas and oil under high pressure, and natural conditions of ground water circulation causing the establishment of abnormal shallow temperatures. The effect of these disturbing influences has been sufficient to obscure the normal relations of depth and temperature to structure which might be expected over anticlines containing oil accumulations.

Long Beach Field

Nineteen wells were measured in this field, making a total of 43 completed. A final report for publication is being prepared from the data obtained. The wells continue to show a more regular and consistent relation between depth, temperature, and structure than was found at Santa Fe Springs. The total variation of depth to a 100 degree isothermal surface is about 200 feet, and of reciprocal gradients about 8 feet per degree. The mean isothermal depth is 1,534 feet and the mean reciprocal gradient about 53 feet per degree Fahrenheit.

EASTERN FIELDS

(Continued from Page 80)

the H. F. Parsons Oil & Gas Co. has a rig up on the L. B. Bee farm.

Monongalia County

On Pedlar Run, Clay district, Monongalia County, the Pedlar Run Oil Co. has made a location on the Lewis R. Hess farm. On Dunkard Creek, the South Penn Oil Co. has started to drill to the lower sands No. 3 on the S. A. Fetty farm. In Jefferson district, Lincoln County, the United Fuel Gas Co. has started to drill on the A. I. Dotson farm. In the same district, the West Virginia Gas Co. is drilling on the Noah Baylous farm.

In Curtis district, Roane County, D. W. Law & Co. are rigging up at a second test no the L. M. Riddle farm. In Walton district, same county, the United Fuel Gas Co. is rigging up on the B. K. Littlepage farm. In the same district, the Parsons Oil & Gas Co. has a rig up on the L. B. Bee farm. In Spencer district, Jefferson Miller & Co. have a rig up on the E. D. Cutright farm. In Reedy district, the Hope Construction & Refining Co. has started to drill on the L. Vandale farm. The same company is rigging up on the Bertha M. Dixon farm.

In McComas district, the Hamilton Gas Co. has a rig up on the W. C. Beckett farm. In Washington district, Boone County, the Owens Bottle & Machine Co. has started to drill on the W. N. Echols farm. In Scott district, the same company has a rig up on the Sylvester M. Wheeler farm. In Battelle district, Monongalia County, the Manufacturers Light & Heat Co. is due in the sand on the J. M. and E. B. Hall farm. In Lincoln district, Tyler County, Neely and others are due in the Big Injun sand on the D. O. Smith farm. In Troy district, Gilmer County, the Carnegie Natural Gas Co. is hauling rig material to a location on the J. E. and E. B. Young farm. In the same district, C. M. Bennett and others have started to drill on the Perry Woofter farm.

SOUTHWEST PENNSYLVANIA

In Richhill Township, Greene County, the Manufacturers Light & Heat Co. has a gasser in the 50-foot sand in its No. 3,374 on the J. D. McCormick farm. In Springhill Township, Wilson & Bissett have a show for a light pumper on the G. W. Kuhn farm.

In East Finley Township, Washington County, the Wasco Fuel Oil Co. has a very light pumper at No. 3 on the E. K. Lewis farm.

SUNRAY BUYS CONTROL OF HOMAOKLA OIL CO.

The Sunray Oil Corp. has purchased 220,000 of the 420,000 outstanding shares of stock in the Homaokla Oil Co., the transfer to become effective on December 1, and eventually expects to purchase the remaining shares and to add the Homaokla's properties to its own.

The Homaokla Oil Co. has 125 producing wells, about 2,300 bbls. daily production, a skimming plant at Allen, and 26,726 acres of undeveloped leases in Kansas, Oklahoma and Texas. The acquisition will give the Sunray Oil Corp. a total of 5,000 bbls. a day production from 225 wells, and a total of 75,000 acres in undeveloped leases.

NEW ARKANSAS MAP

More than two years' work is represented in the new geological map of Arkansas just published by the State Geological Survey under direction of Dr. George C. Branner, state geologist.

It is of particular interest at this time because of the recent activity in leasing and drilling in the Arkansas Valley area where over 100 anticlines and structures have been worked out and mapped, and the earlier red beds exploration in Southeast Arkansas. Geology of the Ozark Mountain region shown is based on published maps by many authors and unpublished data by E. O. Ulrich, C. L. Dake, Josiah Bridge, E. T. McKnight, A. W. Giles and Bryan Parks.

Geology of the Arkansas Valley is from published maps and unpublished data by A. J. Collier, H. D. Miser and Carey Croneis. Data on the Ouachita Mountain region from maps, mostly unpublished, was supplied by L. S. Griswold, A. H. Perdue, H. D. Miser and R. D. Mesler. Geology of the Coastal Plain region in which the State's oil fields are located and all of the gas fields except those in the Fort Smith area which are in the Arkansas Valley province, is from numerous published and unpublished data by A. H. Perdue, H. D. Miser, R. D. Mesler, Carl H. Dane, P. D. Torrey and W. C. Spooner. Editorial work on the collection of maps and data concentrated in this map was done by H. D. Miser and George W. Stone, and the geologic drafting by Pearle L. Vlackman and C. A. Weekerly. The map itself, in colors, was printed by the United States Geological Survey.

OIL IN BULGARIA

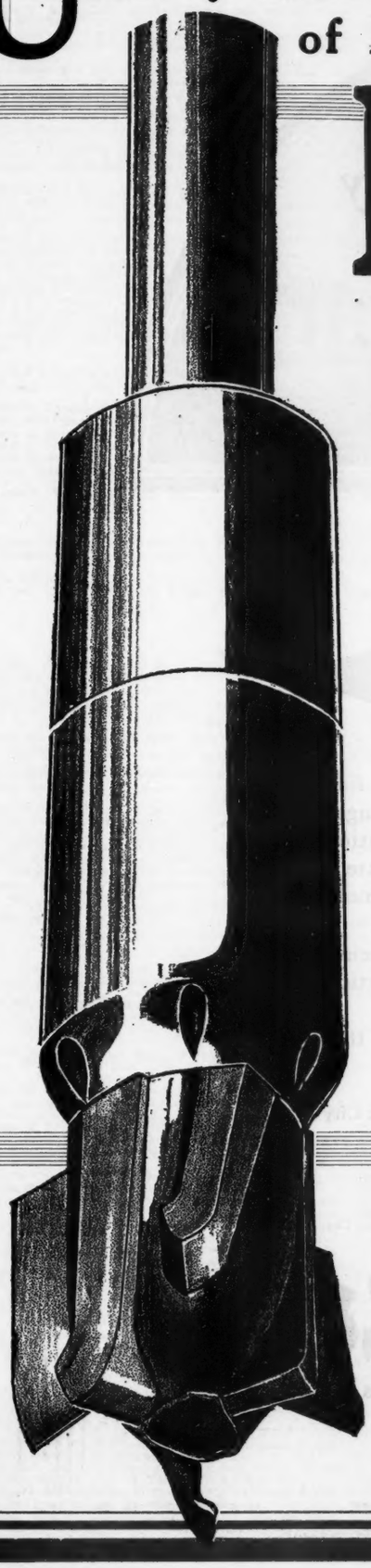
The test drillings begun by the Government in 1927 at Dolno-Maderci, near Kasanlik, had their first success when natural gas was struck at 85 metres. The Ministry of Trade and Industry is now analysing the product. About the middle of September the Ministry began to rig up for a well at Devnia, not far from Varna, which will be taken to 400 metres. Oil traces in the springs around the locality led to this step. A Sofia report states that the recently discovered oil sources at Dalny, Kasanlik and Madotzy will be leased to the Monet Incorporated Co. of New York. Details are not yet settled, but the Government it is said is guaranteed by the company a minimum of 10,000,000 leva per annum after a certain period.

WHERE WATER IS VALUABLE

In the Turner Valley Field some drilling outfits pay $25 a day for water and landowners with dependable springs are reaping a harvest. East Crest Oil Co., in the South Turner Valley, uses 1,000 bbls. a day for rotary drilling.

Used by more than 80% of the major oil companies of America . . . . . The PERFECTION Core Barrel

A Brewster Product



More than 80% of the major oil companies of America are consistent users of the PERFECTION Core Barrel, and the number increases daily.

The PERFECTION is a product of simplicity and rugged strength designed to stand tough punishment.

The famous *Split Liner* — an exclusive feature — makes it possible to remove cores *all in one piece* IN TWO MINUTES!

The heat treated Chrome Nickel Steel Cutter Head, faced with a substance of diamond-like hardness, will take cores easily in the hardest formation.

If *Time* and efficiency mean anything to you, you ought to know more about the PERFECTION Core Barrel. Write to-day for full information.

Ask about other Brewster A. P. I. Products; Shouldered Tool Joints; Drill Collars; Fish Tail and Special Gumbo Bits; Special Rock Bits; Core Barrel Cutter Heads for both soft and hard formations. (Cutter Heads for hard formations are faced with a substance of diamond-like hardness.)

The Brewster COMPANY~INC.

SUCCESSORS TO OIL CITY IRON WORKS INC.

Shreveport, Louisiana

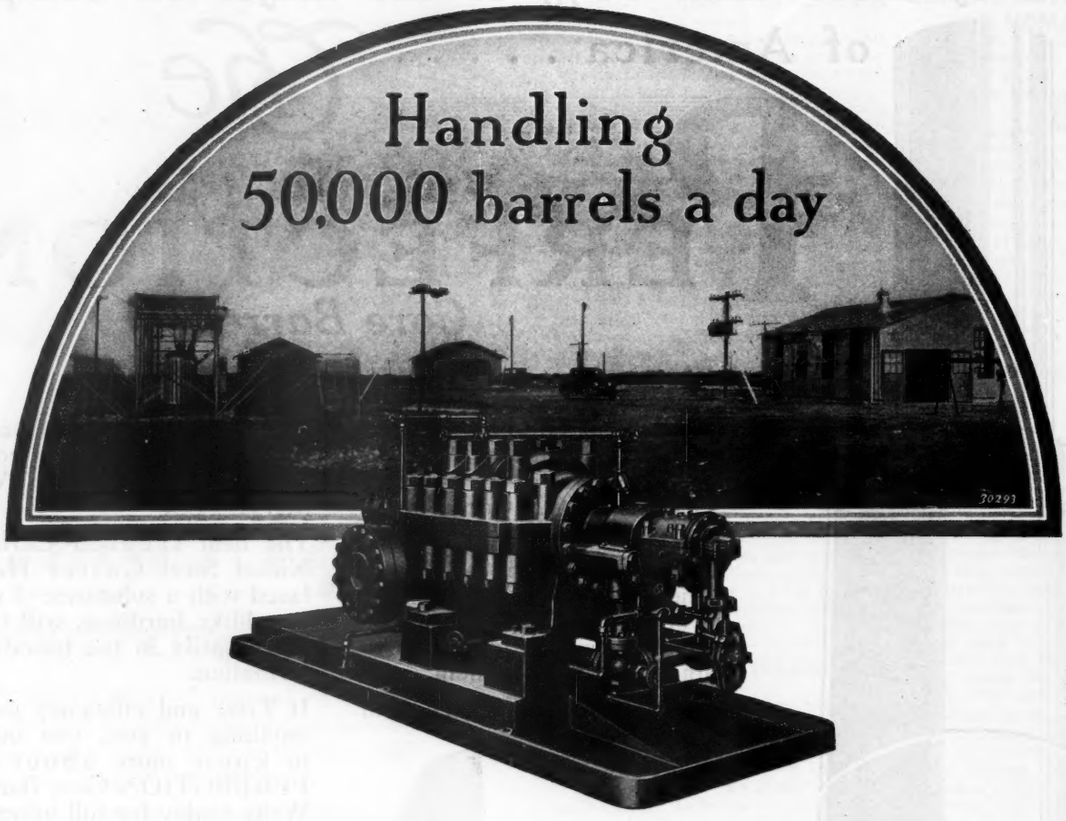
Complete stock carried at these Warehouses:
Red Ball, Inc., 2-4 East California St., Oklahoma City; Phone W-3680
Houston Store, 2000 Harrington St.; Phone Capitol 3021

Distributors: Wilson Supply Co., Houston, Beaumont and Luling, Texas; Continental Supply Co., all stores; Murray-Brooks Hardware Co., Lake Charles, La.; T. T. Word Supply Co., Houston, Texas, and Lake Charles, La.; The Ellis Iron Works, Inc., El Dorado, Ark.

Exclusive Export Agents: The W. K. M. Company, 74 Trinity Place, New York, N. Y.

O.&G.J.—Nov. 14

Handling 50,000 barrels a day



This picture was taken on a busy day at an oil line station in the southwest. Three Cameron Centrifugal Pipe Line Pumps were operating inside the station . . . doing their job with a minimum of fuss and attention . . . a minimum of operating cost . . . a minimum of waste.

A daily quota of 50,000 barrels of oil was being passed along smoothly and evenly to the next station on the line.

And that day is just like every other day at this station.

INGERSOLL-RAND CO. - 11 Broadway - New York City

A. S. Cameron Steam Pump Works

Branches or distributors in principal cities the world over

Butte	Dallas		Los Angeles	Pittsburgh
Birmingham	Denver		Mexico City	Tulsa
Chicago	El Paso		New Orleans	St. Louis
Cleveland	Houston		Philadelphia	Salt Lake City

369-DV

Ingersoll-Rand

A. S. Cameron Steam Pump Works

WILDCAT OPERATIONS IN WEST TEXAS

(Continued from Page 69)

CRANE COUNTY

Church & Field's No. 4 University-Dewell, 2,310 ft. N and 990 ft. E of SW cor. Sec. 39, Blk. 30, University Land ..... Fishing 2,775 ft.
Gulf Prod. Co.'s No. 69 McElroy, 1,442 ft. S and 330 ft. E of NW cor. Gulf's lease, Sec. 185, Blk. F, C.C.S.D. &R.G.N.G.R.R. Sur. ..... Drlg. 920 ft.
Gulf Prod. Co.'s No. 70 McElroy, 1,442 ft. S and 2,970 ft. W of NE cor. of Gulf's lease out of Sec. 201, Blk. 5, C.C.S.D.&R.G.N.G.R.R. Sur. ..... Drlg. 229 ft.
Humble O. & R. Co.'s No. 2-D University, 990 ft. from W and 330 ft. from S of NW Sec. 34, Blk. 30..... Drlg. 2,555 ft.
Republic Prod. Corp.'s No. 1 Hughes, 990 ft. from N and 1,650 ft. from W of their lease, Sec. 2, Julia Prather Sur. ..... Location.
Simms-Atlantic's No. 2-F University, Sec. 45, Blk. 30, 2,310 ft. from N, 330 ft. from E, University ..... Top salt 1,020 ft.; drlg. 2,195 ft.
The Texas Company's No. 3 University, 330 ft. N and E of SW of N half Sec. 46, Blk. 30, University Land.. Drlg. 2,170 ft.; top salt 1,005 ft.
The Texas Company's No. 2 University-Beasly, 330 ft. S and E of NW of S half Sec. 46, Blk. 30, University Land ..... Drlg. 2,750 ft.
Tidal Oil Co.'s No. 2 University D, 330 ft. S and W of NE cor. NW of SW Sec. 34, Blk. 30, University Land.. Set 8-in. casing 2,582 ft.

CROCKETT COUNTY

California Co.'s No. 3 Powell, Lease No. 1, 1,056 ft. N and 495 ft. E of SW cor., Sec. 62, Blk. BB, G.C. &S.F. ..... Shut down 2,618 ft.; top pay 2,611 ft.; 1,000 ft. oil in hole.
California Co.'s No. 1 Shannon, Lease 3, 1,663 ft. N and 2,323 ft. W of SE cor. Sec. 42, T.C.R.R. ..... Location.
Cushing R. & G. Co.'s No. 3 Powell, 330 ft. from S and E of Sec. 53, Blk. BB, G.C.&S.F.R.R. Sur. ..... Location.
Empire Gas & Fuel Co.'s No. 1 Shannon, 330 ft. from N and E of Sec. 42, T.C.R.R. Sur. ..... Rigging up.
Lewis & Daniels' No. 1 Pecos River Bed, 19 yards S and 37 degrees E of NW cor., Sec. 33, Blk. 1, L.&G.N. Sur... Shut down 1,355 ft.
Moncrief's No. 3 Todd, 330 ft. from S and E, Sec. 29, Blk. VV ..... Made 7 bailers oil at 1,231 ft.; Drlg. 1,480 ft.
T. P. Coal & Oil Co.'s No. 1 Shannon, 330 ft. from S and W of Sec. 44, T.C.R.R. Sur. ..... Rig.

CULBERSON COUNTY

Grisham & Hunter Oil Corp.'s No. 1 fee, 330 ft. from S and W of Sec. 14, Blk. 59, T.&P. ..... Drlg. 2,040 ft.; oil show 1,437 ft.
Grisham & Hunter's No. 1 Seay, 330 ft. from S and W of Sec. 16, Blk. 59, Twp. 7, T.&P.R.R. Sur. ..... Building rig.
Grisham-Hunter's No. 3 Seay, 330 ft. from S line, 330 ft. from W line, Sec. 16, Blk. 59, Twp. 7 ..... Moving in machinery.
Hickey & Stiver's No. 1 C. O. Finley, 600 ft. N and 1,980 ft. W. Sec. 20, Blk. 82 ..... Small show oil 1,331 ft.; shut down 2,260 ft.; hole full water; elev. 3,874 ft.; shut down for 30 days.
West Coast Oil & Exploration Co.'s No. 1 McGregor, C NW, Sec. 14, Blk. 81 ..... Slight show oil 740 ft.; shut down 825 ft.; repairing engine.
Scott & Dittman's No. 1 Miller, 1,160 ft. N and 2,480 ft. E. Sec. 1, Blk. 97, Public School Land ..... Rainbow 1,056 ft.; 300 ft. sulphur water 1,725 ft.; oil show 2,528 ft.; hole full sulphur water; running 6-in. casing; shut down 3,508 ft.

ECTOR COUNTY

Anderson's No. 1 fee, 1,320 ft. E along N line, Sec. 19, and 150 ft. N at right angles with line, Sec. 18, Blk. B-16, Public School Land ..... Moving in material.
Penn-Humble's No. 1 York, 330 ft. N, 2,640 ft. W. Sec. 16, Blk. 44, Twp. 3s, T.&P.R.R. Sur. ..... Spudding.

EL PASO COUNTY

Laytex's No. 1 Malone, 2,200 ft. SW and NW, Sec. 46, J. M. Day Sur. ..... Fishing tools 1,481 ft.

EDWARDS COUNTY

A. M. Griffith's No. 1 Wardlow, Sec. 60, V-S, J. C. Clift Sur. ..... Shut down 3,000 ft.

FISHER COUNTY

Cranfill & Reynolds' No. 1 Barrett, Sec. 191, Blk. 1, 330 ft. from S and W of NE. B.B.B.&C.Ry. ..... Drlg. 2,895 ft.
Cranfill & Reynolds' No. 1 Bledsoe, 330 ft. N and E of SW SE, Sec. 200, B.B.B.&C.R.R. Sur. ..... Location.
Landreth Prod. Corp.'s No. 2 Cooper, 330 ft. S and W of NE cor. Sec. 116, Blk. 1, H.&T.C.R.R. Sur. ..... Drlg. 1,565 ft.
Magnolia Pet. Co.'s No. 1 Lee, Sec. 357, 2,310 ft. from N and 4,286 ft. from W ..... Underreaming 6-in. at 3,493 ft.
Midwest Oil Co.'s No. 1 Steele, 660 ft. from S, 440 ft. from W, Sec. 210, Blk. 1 ..... Show oil 2,940-45 ft.; top pay 3,192 ft.; waiting on pipe line connections at 3,192 ft.; swabbing 480 bbls. daily; shut in for storage.
H. Riley's No. 1 J. H. Veatch, 250 ft. S and 990 ft. E of NW cor., Sec. 4, English Sur. ..... Shut down 3,300 ft.
Roeser-Pendleton and Amerada's No. 1 First Nat'l Bank of Waco, 660 ft. N and 600 ft. W of SE cor. NE of Sec. 204, B.B.B.&C. Sur. ..... Drlg. 1,340 ft.

GAINES COUNTY

Louisiana O. & R. Co.'s No. 1 Ralph, 1,320 ft. from S and W of Sec. 7, Blk. A-28, Public School Land .... Drlg. 452 ft., red rock.

GARZA COUNTY

Pandem Oil Corp.'s No. 1 Stokes, 2,310 ft. N and E of SW Section 32, Blk. 5, G.H.&H.R.R. Sur. ..... Drlg. 735 ft.
Bell Thompson's No. 1 Tuffing, 330 ft. from S, 2,310 ft. from E, Sec. 10, Blk. 6, H.&G.N. ..... Shut down 2,610 ft.

GLASSCOCK COUNTY

The California Co.'s No. 3 Currie, 990 ft. S and 2,310 ft. W of NE cor., Sec. 219, Blk. 29, W.&N.W.R.R. Sur.. Shut down 2,177 ft.
California Co.'s No. 1 Jones, 330 ft. S from N and E lines, Sec. 25, Blk. 33, Twp. 2s, T.&P. Sur. ..... Rig.
Chal Daniel et al's No. 1 Meek, 2,310 ft. W and 1,600 ft. N of SE cor., Sec. 7, Blk. 34, Twp. 3s, T.&P. Sur... Shut down 1,170 ft.
Glasscock et al's No. 1 Edwards, 330 ft. from S. 1,650 ft. from E, Sec. 18, Blk. 33, Twp. 2s, T.&P.R.R. Sur... Drlg. 1,498 ft.
Kirby Pet. Co. et al's No. 2 Baker, 990 ft. S and 330 ft. E of NW cor. Sec. 23, Blk. 33, Twp. 2s, T.&P.R.R. Sur. ..... Drlg. 1,015 ft.
Lion O. & R. Co.'s No. 2 Coffee, 330 ft. from N and 990 ft. from E of Sec. 22, Blk. 33, Twp. 2s ..... Drlg. 1,843 ft.
Lion Oil & Ref. Co.'s No. 3 Coffee, 990 ft. S and 330 ft. W of NE cor. Sec. 22, Blk. 33, Twp. 2s, T.&P.R.R. Sur. ..... Drlg. 1,420 ft.
Shell Pet. Corp.'s No. 1 Coffee, 330 ft. from S and 1,650 ft. from E of Section 16, Blk. 33, Twp. 2s ..... Top pay 2,098 ft.; plugging back to shut off sulphur water at 2,239 ft.
Shell Pet. Corp.'s No. 1-B Kloh-Rumsey, 330 ft. from N and W of Sec. 11, Blk. 33, Twp. 3s, T.&P. ..... Drlg. 2,028 ft.
Simms Oil Co.'s No. 1 Coffee, 330 ft. from N and 1,650 ft. from E of Sec. 22, Blk. 33, Twp. 2s, T.&P. ..... Drlg. 1,408 ft.
E. L. Smith Oil Co.'s No. 2 Coffee, 330 ft. from S and 990 ft. from E of Sec. 15, Blk. 33, Twp. 2s, T.&P.... Drlg. 240 ft.
Sun Oil Co.'s No. 4 Phillips, 330 ft. N and 990 ft. W of SE cor. Sec. 14, Blk. 33, Twp. 2s, T.&P.R.R. Sur. ..... Drlg. 960 ft.
Texas State Oil Co.'s No. 1 Coffey, 330 ft. from S and 990 ft. from E, Sec. 19, Blk. 34, Twp. 2s ..... Shut down 2,461 ft.
World Oil Co.'s No. 2-C McDowell, Sec. 21, Blk. 34, Twp. 2s, 330 ft. S and 2,310 ft. E of NW cor..... Shut down for orders.

HOWARD COUNTY

American Maracaibo Co.'s No. 3-A Settles, Sec. 6, Blk. 32, Twp. 2s, 777 ft. from N, 990 ft. from W, T.&P. R.R. Sur. ..... Shut down 2,270 ft.; top pay 2,248 ft.; swabbed 60 bbls. per hour for 16 hrs.; to pump.
American Maracaibo's No. 2-B Settles, 990 ft. N and 2,310 ft. E of SW cor., Sec. 135, Blk. 29, W.&N.W. R.R. Sur. ..... Location.
Continental Oil Co.'s No. 6-C Chalk, 1,520 ft. from N and 2,440 ft. from E, Sec. 140, Blk. 29, W.&N.W. R.R. Sur. ..... Shut down 1,848 ft.; top pay 1,817 ft.; cleaning out.
Continental Oil Co.'s No. 2 Kloh-Rumsey, 2,310 ft. S, 330 ft. W of NE cor. Sec. 13, Blk. 33, Twp. 2s, T.&P.R.R. Sur. ..... Shut down 2,308 ft.; plugged back 2,298 ft.
Continental Oil Co.'s No. 4 Kloh-Rumsey, 2,310 ft. S and 1,650 ft. W of NE cor. Sec. 13, Blk. 33, Twp. 2s, T.&P.R.R. Sur. ..... Shut down 2,072 ft.
Continental Oil Co.'s No. 5 Kloh-Rumsey, 2,310 ft. S and 990 ft. W of NE cor. Sec. 13, Blk. 33, Twp. 2s, T.&P.R.R. Sur. ..... Shut down 1,500 ft.
Continental Oil Co.'s No. 3 Clay-F, 250 ft. S and 660 ft. W of NE cor., Sec 138, Blk. 129, W.&N.W.R.R. Sur... Show oil 2,595-2,675 ft.; shut down 2,750 ft.
Cosden Oil Co.'s No. 6 Roberts-A, 200 ft. N and E of SW cor., Sec. 129, Blk. 29, W.&N.W.R.R. Sur. ..... Shut down 1,456 ft.
Godley Oil Co.'s No. 2 Hooks, 1,980 ft. S and 200 ft. E of NW cor. Sec. 140, Blk. 29, W.&N.W.R.R. Sur. ..... Shut down 1,857 ft.; top pay 1,835 ft.; shot 60 qts 1,835-55 ft.; cleaning out.
Group No. 1 & Continental Oil Co.'s No. 7-A Settles, 1,650 ft. N and 2,310 ft. W of SE cor. Sec. 135, Blk. 29, W.&N.W.R.R. Sur. ..... Show oil 2,272 ft.; shut down 2,660 ft.
Group No. 1 & Continental Oil Co.'s No. 8-A Settles, 990 ft. N and 2,310 ft. W of SE cor. Sec. 135, Blk. 29, W.&N.W.R.R. Sur. ..... Drlg. 1,411 ft.
Gulf Prod. Co.'s No. 8 Clay, 330 ft. S and 1,650 ft. W of NE cor. W half Sec. 155, Blk. 29, W.&N.W.R.R. Sur... Cleaning out 1,857 ft.; swabbed 107 bbls. in 9 hrs.
Magnolia Pet. Co.'s No. 13 Dora Roberts, 2,440 ft. N and 1,650 ft. E of SW cor. Sec. 136, Blk. 29, W.&N.W. Sur. ..... Shut down 2,927 ft.
Merriwether's No. 1 Smith, 150 ft. from S, 2,490 ft. from W, Sec. 45, Blk. 33 ..... Shut down 1,220 ft.
Moody Oil Corp.'s No. 29-B, Sec. 137, Blk. 29, 330 ft. from N and 1,650 ft. from W ..... Top pay 1,890 ft.; total depth 1,911 ft.
Moody Oil Corp.'s No. 23-B Roberts, 990 ft. from N and W of Sec. 137, Blk. 29 ..... Shut down 261 ft.
Moody Oil Corp.'s No. 20-E Roberts, 1,650 ft. S, 2,310 ft. W of NE Sec. 136, Blk. 29, W.&N.W.R.R. Sur..... Spudding.
Plymouth Oil Co.'s No. 4 Abrams, 330 ft. from N and 1,650 ft. from W, Sec. 5, Blk. 32, Twp. 2s ..... Top pay 2,480 ft.; shut down 2,519 ft.; plugged back 2,505 ft.; pumped 20 bbls., 15 per cent water, in 24 hrs.; may shoot.
Plymouth Oil Co.'s No. 6 Abrams, Sec. 5, Blk. 32, Twp. 2s, 1,650 ft. from S, 330 ft. from W, T.&P..... Top pay 2,175 ft.; drlg. 2,240 ft.; 1,400 ft. oil in hole.
Plymouth Oil Co.'s No. 7 Abrams, 2,310 ft. from N, 330 ft. from W, Sec. 5, Blk. 32, Twp. 2s, T.&P. Sur..... Drlg. 2,160 ft.
Pure Oil Co.'s No. 2 A. J. Hooks, 2,440 ft. N and 600 ft. E of SW cor. Sec. 140, Blk. 29, W.&N.W.R.R. Sur. ..... Drlg. 1,595 ft.
Pure Oil Co.'s No. 1-A Scrivner, 990 ft. from W and 330 ft. from S of Sec. 4, Blk. 32, Twp. 2s..... Location.
Shell Pet. Corp.'s No. 2 Abrams, Sec. 13, Blk. 33, Twp. 2s, 2,310 ft. from S, 990 ft. from E, T.&P. ..... Top pay 2,135 ft.; pumped 1,106 bbls. 24 hrs. at total depth 2,180 ft.
Ward Oil Co.'s No. 15 Roberts, 2,430 ft. from S and W, Sec. 137, Blk. 29 ..... Show oil 1,345-50 ft.; shut down 1,381 ft.; pumped 118 bbls. first 18 hrs.

HUDSPETH COUNTY

California Co.'s No. 1 University, 3,321 ft. N and 2,554 ft. E of SW cor., Sec. 19, Blk. E ..... Drlg. 2,829 ft.
George Richardson's No. 1 Paxton, 2,640 ft. from N and W, Sec. 9, Blk. 16 ..... Shut down 295 ft.
Western States Oil Co.'s No. 1 Moore, C SE Sec. 16, Blk. 71, Twp. 6, T.&P. Sur. ..... Shut down 2,760 ft.
Western States Oil Co.'s No. 1 Gardner & Moseley, NE NW, Sec. 12, Blk. 18 ..... Fishing 3,140 ft.

IRION COUNTY

Banner's No. 2 Nutt, Subdivision 5, 150 ft. from N and E of W half Gonzales County School Lands ..... Location.
Brown & Fox's No. 2 Tankersley, 160 ft. from N and 500 ft. from E lines of S half of Sec. 712, F. Willig Sur. ..... Material.
Crawford Oil Co.'s No. 1 Williams, 450 ft. from N, 150 ft. from W. Subd. 8 ..... Shut down 1,105 ft.
Carl Cromwell's No. 1 Nutt, 150 ft. from N, 1,161 ft. from W. Subd. 6, Gonzales County School Land ..... Plugging back to 1,472 ft.; pumped 40 bbls. in 24 hrs.; total depth 1,480 ft.; pumped 10 bbls. oil, 6 bbls. water.
Carl Cromwell's No. 1 Tankersley, 2,490 ft. from S and E. Sec. 1,218, T.C.R.R. Sur. ..... Rigging up.
Cromwell et al's No. 1 Fuller, 2,134 ft. N and 631 ft. W of SE cor., Sec. 81, Blk. 1, H.&T.C.R.R. Sur..... Location.
Dennys & Andrews' No. 1 Tankersley, 2,660 ft. from W, 600 ft. from S of Sec. 4, H. N. Wallace Sur. ..... Fishing 400 ft.
Kingwood Oil Co. et al's No. 1 J. D. Suggs, SE NW SE Sec. 19, Blk. 7, H.&T.C. Sur. ..... Show gas 7 656 ft.; set 4½-in. casing 7,550 ft.; shut down 7,720 ft.
J. A. Starkweather's No. 1 Lindley, Sec. 1,160½ ,900 ft. from S, 150 ft. from E, H.&T.C. Sur. on E ..... Shut down 1,149 ft.
P. H. Williams' No. 1 Ash, C of Sec. 20, Washington County ..... Fishing 4,700 ft.

JONES COUNTY

J. H. Adsit et al's No. 1 Swenson, C of NE of SE, Sec. 192, B.B.B.&C. Sur. ..... Underreaming 6-in. csg. 2,250 ft.
Cosden-Herbert et al's No. 3 Bickley, 330 ft. N and W of SE cor. of S half NW, Sec. 50, Blk. 18 ..... Rig.
Cranfill-Reynold's No. 1 Stevens, 990 ft. from N and 3,630 ft. from W of John McMullen Survey 337 ..... Drlg. 325 ft.
Mid-Tex Oil & Gas Co.'s No. 1 King ..... Shut down 1,520 ft.
Mid-Tex Oil & Gas Co.'s No. 1 Minter, 765 ft. from N and 607 ft. from E of 86-acre tract in NW cor. Sec. 41, Block 15, T.&P Sur. ..... Shut down 165 ft.
Shabeen et al's No. 1 King ..... Underreaming 8-in. csg. 1,650 ft.

KENT COUNTY

White & Smith's No. 1 Pursley estate, 1,320 ft. from E and 2,640 ft. from S of Sec. 3, Blk. H, H.&T.B. ..... Fishing 300 ft.

KIMBLE COUNTY

C. L. Bryant et al's No. 1 Lambert, 700 ft. from N and W line of F. Lotta Sur. ..... Shut down 800 ft.
McLean & Jamison's No. 1 Cannon, 1,940 ft. N and 300 ft. W of SE cor. Robert Cochran Sur. ..... Shut down 1,504 ft.

LOVING COUNTY

Humble Oil & Ref. Co.'s No. 1 Kloh, 2,640 ft. N and W Sec. 35, Blk. 55, Twp. 2, T.&P.R.R. Sur. ..... Drlg. 2,008 ft.
Independent O. & G. Co.'s No. 1 Wheat, 330 ft. each way from W cor. of Sec. 85, Blk. 1, W.&N.W. ..... Drlg. 160 ft.
Lockhart Co.'s No. 3 Allen, 330 ft. from NE, 1,650 ft. from NW, Sec. 82, Blk. 33, H.&T.C. ..... Top salt 725 ft.; drlg. 2,260 ft.

Lockhart & Co.'s No. 3 Hubbard, 330 ft. from NE and SE, Sec. 33, Blk. 33, H.&T.C. ..... Top salt 775 ft.; running 6-in. casing; total depth 4,234 ft.; flowed 300 bbls. in 24 hrs.

Lockhart & Co.'s No. 4 Hubbard, 1,660 ft. NE, 330 ft. NW, Sec. 33, Blk. 33, H.&T.C. ..... Cem. 10-in. casing 690 ft.; cem. 8-in. casing; drlg. 3,120 ft.

LYNN COUNTY

Lubewell Oil Co.'s No. 1 May, 2,310 ft. S, 2,310 ft. W, Sec. 10, Blk. 7, E.L.R.R. ..... Shut down 190 ft. for casing.

George McCamey's No. 1 Edwards, 165 ft. N and E, Sec. 5, Blk. 2, L.S.&W. Sur. ..... Top salt 2,140 ft.; oil show 1,580-90 ft.; hole full sulphur water 4,730 ft.; drlg. 4,755 ft.; set 6-in. casing 4,733 ft.

MENARD COUNTY

I. C. Barnett's No. 2 Callan, Sec. 1, 1,050 ft. from S, 1,190 ft. W ..... Shut down 603 ft.

MITCHELL COUNTY

Gibson & Johnson's No. 2 Scott, 150 ft. N and 2,490 ft. W of SE cor. Sec. 7, Blk. 19, Lavaca Navigation Co. ..... Spudded and shut down.

Seiger's No. 1 Scott, C of NE of SW, Sec. 36, Blk. 17, S.P.R.R. Sur. ..... Shut down 730 ft.

Texas & Wheeler's No. 1 Radford, 1,320 ft. N and W of Sec. 1, Blk. 27, T.&P. Sur. ..... Shut down 4,310 ft.

NOLAN COUNTY

Gibson & Johnson's No. 1 Bond, 1,320 ft. from N and 1,980 ft. from E of Sec. 42, Blk. 20, T.&P. ..... Drlg. 1,805 ft.

Phillips Pet. Co.'s No. 1 Plunkett, 330 ft. N and W of SE cor. NW, Sec. 66, Blk. 23, T.&P. Sur. ..... Shut down 4,280 ft.

PECOS COUNTY

The Texas Company's No. 1 Wright, 330 ft. S and E of NW cor. Sec. 9, Blk. 131, T.&St.L.R.R. Sur. ..... Machine.

Anna Bell Oil Co.'s No. 1 Hollingsworth, 150 ft. N and W of C Sec. 24, Blk. 11, H.&G.N.R.R. Sur. ..... Machine.

Buell & Hagan's No. 1 Byrne, 990 ft. from N and 2,310 ft. from E of Sec. 54, Blk. 10, H.&G.N.R.R. Sur. .... Location.

California Co.'s No. 3 Smith, Lease No. 5, Sec. 16, Blk. 194, 337 ft. from S and 166 ft. from E, G.C. &S.F. Sur. ..... Top pay 1,815 ft.; total depth 1,832 ft.; 1,171 ft. oil in hole; shut down for storage.

California Co.'s No. 6 Smith, Lease No. 1, 1,700 ft. N and 330 ft. W of SE cor. Sec. 37, Blk. 194, G.C. &S.F.R.R. Sur. ..... Rig.

California Co.'s No. 2 Tippett, 2,016 ft. from S and 1,040 ft. from E of Sec. 2, D.F. Robertson Sur. ..... Location.

Continental Oil Co.'s No. 2 University, 330 ft. S and 1,680 ft. E of NW cor. of Sec. 6, Blk. 17, University Land ..... Cellar.

Continental Oil Co.'s No. 3 University, 330 ft. S and 2,371 ft. E of NW cor. Sec. 6, Blk. 17, University Land ..... Location.

Continental Oil Co.'s No. 4 University, 330 ft. S and E of NW cor. of Sec. 6, Blk. 17, University ..... Cem. 10-in. casing at 941 ft.

Continental Oil Co.'s No. 5 University, 330 ft. S and 1,020 ft. E of NW cor. Sec. 6, Blk. 17, University Land ..... Top pay 972 ft.; total depth 972 ft.; flowed 740 bbls. 14 hrs.

Continental Oil Co.'s No. 6 University, 330 ft. S and 3,031 ft. E of NW cor. of Sec. 6, Blk. 17, University Land ..... Cellar.

Corzelius Bros. et al's No. 1 Cordova, 2,490 ft. from N and 1,515 ft. from W Sec. 29, Blk. 11, H.&G.N.R.R. Sur. ..... Drlg. 860 ft.

Cosby Drlg. Co.'s No. 1 Fort Stockton Land Co., 330 ft. from N and E of Sec. 34, Blk. 11, H.&G.N. ..... Top salt 1,140 ft.; drlg. 2,285 ft.

Cosden Oil Co.'s No. 1 McDonald, 350 ft. from N and E of Sec. 1, H.E.&W.T. ..... Shut down 225 ft.

Cowboy Evans' No. 1 Pecos Valley, 2,310 ft. from NW line, 990 ft. from SW line of Sec. 36, Blk. 3, H.&T.C. R.R. Sur. ..... Top salt 1,215 ft.; shut down 1,604 ft.; top pay 1,556 ft.; flowed 10 bbls. after standing 4 hrs.; run 2½-in. tubing; well dead.

Dixie Oil Co.'s No. 1 McKinzie, 3,300 ft. from N and 2,025 ft. from W of Sec. 15, Blk. 604, G.C.&S.F. ..... Location.

Gulf Prod. Co.'s No. 21-A Smith, 1,544 ft. N and 330 ft. W of SE cor. Sec. 28, Blk. 194, G.C.&S.F.R.R. Sur. .... Flowed 70 bbls.; 1,000 ft. oil in hole; shut down 1,670 ft.

Harrison & Cromwell's No. 1 White-Baker, 2,310 ft. from S and E, Sec. 42, Blk. 11, H.&G.N.R.R. Sur. .... Drlg. 225 ft.

Henshaw et al's No. 2 University, 330 ft. from N and E lines of NW of NE of Sec. 13, Blk. 18 ..... Cellar.

Henshaw et al's No. 3 University, 330 ft. from S and E of NW cor. of NE of Sec. 13, Blk. 18 ..... Spudding.

Henshaw Oil Corp.'s No. 1 McDonald, 330 ft. from N and W of S 109 ac. of N 189 ac., Sec. 2, H.E.&W.T. .... Top salt 690 ft.; shut down 1,440 ft.

Humble Oil & Ref. Co.'s No. 1 Cunningham, C of SW Sec. 34, Blk. 11, H.&G.N.R.R. Sur. ..... Rig.

Independent & Rowan & Tong's No. 2 McDonald, 153 ft. from W line and 170 ft. from N line of S half NE Sec. 46, Blk. 12 ..... Show of oil, gas and sulphur water 1,360-64 ft.; drlg. 1,560 ft.

Independent O. & G. Co.'s No. 1 Phelps, 150 ft. N and W of N half of NE Sec. 26, Blk. 11, H.&G.N.R.R. Sur. ..... Rigging up.

Jayhawk Oil Co.'s No. 1 Price, 1,310 ft. from W, 330 ft. from S, Sec. 6, Blk. 12, H.&G.N.R.R. Sur. ..... Top salt 610 ft.; shut down 1,355 ft.

J. L. Kennedy's No. 1 Roberts, C of Sec. 78, Blk. 8, T.&P.R.R. Sur. ..... Cleaning out 1,336 ft.

Sam Kitts et al's No. 1 Sherbino, 330 ft. from N and 990 ft. from W line, Sec. 52, Blk. C-4, G.C.&S.F.R.R. .... Top salt 976 ft.; drlg. 2,448 ft.

Landreth Prod. Corp.'s No. 1 Cunningham, 235 ft. S and 275 ft. W of NE of S half of Sec. 32, Blk. 11, H.&G.N.R.R. ..... Drlg. 860 ft.

Landreth Prod. Corp. et al's No. 1 Smithpeter, 330 ft. N and 280 ft. W of SE cor. Sec. 31, Blk. 11, H.&G.N.R.R. Sur. ..... Gas show 1,360 ft.; fishing tools 1,655 ft.

Landreth Prod. Co.'s No. 1-C University, 330 ft. from N and E, NW of SW of Sec. 31, Blk. 16 ..... Shut down 970 ft.

Landreth Prod. Co.'s No. 1-D University, 990 ft. from S and 990 ft. from W of Sec. 31, Blk. 16 ..... Show gas 962 ft.; show oil 969 ft.; drlg. 1,652 ft.

Landreth Prod. Co.'s No. 2-A McDonald, 330 ft. from N and E of Sec. 46, Blk. 12, H.&G.N. ..... Show gas 1,310 ft.; show sulphur water 1,320 ft.; top pay 1,672 ft.; total depth 1,684 ft.; flowed 347 bbls. in 24 hrs.

Landreth & Dunning's No. 1 McDonald, 330 ft. N and E of SW cor. Sec. 40½, Blk. 12, H.&G.N.R.R. Sur. .... Fishing tools 1,465 ft.

Landreth Prod. & Henshaw Bros.' No. 1-E University, 330 ft. N and W of SE cor. W half NE Sec. 13, Blk. 18, University Land ..... Drlg. 250 ft.

Landreth Prod. & Henshaw Bros.' No. 2-E University, 330 ft. S and E of NW cor. of W half of NE Sec. 13, Blk. 18, University Land ..... Cellar.

Landreth Prod. Corp. et al's No. 1-F University, 330 ft. from S and E of NE of SW Sec. 31, Blk. 16 ..... Drlg. 475 ft.

Landreth & Henshaw's No. 1 University-G, 330 ft. N and E of SW cor. Sec. 31, Blk. 16, University Land .... Drlg. 982 ft.

Landreth & Henshaw's No. 2 University-G, 330 ft. N and W of SE cor. SE of SW Sec. 31, Blk. 16, University Land ..... Shut down 974 ft.; top pay 970 ft.; flowed 245 bbls.

Landreth & Henshaw's No. 3 University-G, 330 ft. S and W of NE cor. of SE SW Sec. 31, Blk. 16 ..... Drlg. 646 ft.

Landreth Prod. Corp. et al's No. 1-I University, 330 ft. from S and W of NE of NE Sec. 24, Blk. 18 ..... Cellar.

Landreth Prod. and Henshaw Bros.' No. 2-I University, 330 ft. S and W of NE Sec. 24, Blk. 18, University Land ..... Location.

Landreth Prod. & World Oil Co.'s No. 4-B University, 330 ft. S and W of NE SE NE Sec. 13, Blk. 18, University Land ..... Drlg. 1,585 ft.; 4,000,000 ft. gas 1,583 ft.

Landreth Prod. & World Oil Co.'s No. 5-B University, 330 ft. N and W of SE NE Sec. 13, Blk. 18, University Land ..... Drlg. 1,485 ft.

Seminole Oil Co.'s No. 1 Pecos Valley, Sec. 22, Blk. 10, 360 ft. from SW, 2,280 ft. from SE, H.&G.N. Sur. .... Location.

Mauch & Kroger's No. 1 Holmes, Sec. 5, Blk. 178, T.C. Sur. ..... Shut down 1,442 ft.

Mazda Oil Co.'s No. 1 Cordova Union Land Co., 2,310 ft. from N and 990 ft. from E of Sec. 103, Blk. 11, H.&G.N. ..... Rigging up.

Merrick-Bristow's No. 1 Neville, 330 ft. from S and W, Sec. 43, Blk. 12, H.&G.N.R.R. Sur. ..... Top salt 645 ft.; shut down 1,670 ft.

R. E. Moore's No. 1 Arnold, 1,320 ft. from S and 660 ft. from E lines of Sec. 18, Blk. 1, H.&T.C.R.R. ..... Show oil 1,216 ft.; drlg. 1,300 ft.

Moncrief's No. 1 Clarkson, Sec. 84, Blk. 12, H.&T.N.R.R. Sur., 2,310 ft. from N and W. ..... Top salt 860 ft.; running 8-in. pipe 1,725 ft.

Moncrief's No. 5 Tippett, 330 ft. N and 200 ft. W of SW cor., Sec. 101, located in Sec 107, C.T.&M.C.R.R. Sur. .. Location.

Moncrief's No. 1 Sullivan, 150 ft. E of C of SW Sec. 58, Blk. 11, H.&G.N.R.R. Sur. ..... Location.

George Morgan's No. 2 Toborg, Sec. 539, Blk. 1, 150 ft. S of Moncrief's No. 1 ..... Show oil 1,208 ft.; total depth 1,285 ft.; plugged back to 1,280 ft.; flowing 3 bbls. daily.

Mid-Kansas Oil & Gas Co.'s No. 32 Yates-A, 225 ft. N of most southerly N line and 1,308 ft. E of most western E line, Sec. 32, Blk. 194, I. G. Yates, Sur. A-8,195 ..... Fishing pipe 850 ft.

H. T. O'dneal's No. 1 Power, 2,640 ft. from N and 150 ft. from W, Sec. 1, Blk. 132, T.&St.L.R.R. Sur. .... Location.

S. B. Owen's No. 1 Masterson, 330 ft. NE of SW line and 330 ft. NW of SE of Sec. 104, Blk. 10, H.&G.N. .. Drlg. 1,257 ft.; top pay 1,249 ft.; 700 ft. oil in hole.

J. D. O'Mara's No. 1 Bennett, Sec. 592, 1,460 ft. from S, 150 ft. from E, G.C.&S.F. ..... Fishing 875 ft.

J. D. O'Mara's No. 1 Streety, C of Sec. 1, W. P. Howard Sur. ..... Shut down 875 ft.

Phillips Pet. Corp.'s No. 3 Pryor, 865 ft. from N and 440 ft. from W of Sec. 78, Blk. OW, T.M.R.R. .. Drlg. 225 ft.

Phillips Pet. Co.'s No. 2 Ramsey, 2,635 ft. from N and 1,070 ft. from E of Sec. 17, Blk. 194, G.C.&S.F. .... Machine.

Phillips Pet. Co.'s No. 4 Ramsey, 2,722 ft. from N and 1,980 ft. from E of Sec. 17, Blk. 194, G.C.&S.F. ..... Drlg. 1,465 ft.

Rector Oil Co.'s No. 1 State Land, 330 ft. N and W of SE cor. Sec. 106, Blk. 8, H.&G.N.R.R. Sur. ..... Drlg. 1,115 ft.

M. M. Rowan's No. 1 University, NE Sec. 25, Blk. 16 .... Shut down 2,044 ft.

Schumaker et al's No. 1 Williams et al, 330 ft. N of middle of S line, Sec. 1, Blk. 117, G.C.&S.F. ..... Drlg. 2,450 ft.

Shell Pet. Corp.'s No. 1 Owen et al, 220 ft. each way from E cor. Sec. 16, Blk. 5, H.&T.C. ..... Location.

Shell Pet. Corp.'s No. 1 Percival, 330 ft. from N and E of SE Sec. 199, Blk. 3, L.&G.N. ..... Location.

Sides & Cloyd's No. 2 Blackstone & Slaughter, C NW of Sec. 34, Blk. A-2, T.&C.R.R. Sur. ..... Drlg. 295 ft.

Shell Pet. Corp.'s No. 2-C University Land, 330 ft. S and E of SW of NW Sec. 31, Blk. 16, University Land .... Show oil 1,352 ft.; top pay 1,639 ft.; shut down 1,647 ft.; flowed 169 bbls. first 24 hrs.; total depth 1,657 ft.; plugged back to 1,655 ft.; flowed 8 bbls. in 24 hrs.

Shell Pet. Corp.'s No. 3-C University, 330 ft. N and W of SE of SW of NW Sec. 31, Blk. 16, University Land ..... 40,000,000 ft. gas 940-45 ft.; drlg. 1,330 ft.

Shell Pet. Corp.'s No. 4-C University, 330 ft. N and E of SW of SW NW of Sec. 31, Blk. 16, University Land ..... Top pay 1,618 ft.; total depth 1,645 ft.; flowed 237 bbls.

Skelly Oil Co.'s No. 1 University, 330 ft. from S and W of N half SE Sec. 31, Blk. 16 ..... Drlg. 525 ft.

Southern Crude O. P. Co.'s No. 1 Jackson T-139, Sec. 28, Blk. 3, 1,487 ft. from NE, 2,519 ft. from SE cor. ..... Location.

Sun Oil Co.'s No. 1 University-Toler, Sec. 25, Blk. 18, 330 ft. from N and 2,310 ft. from E ..... Oil show 1,410 ft.; shut down 1,813 ft.

Taylor-Link's No. 5 University, 990 ft. from N and 330 ft. from W of Sec. 30, Blk. 16 ..... Drlg. 1,300 ft.; 30,000,000 ft. gas.

Taylor-Link's No. 6 University, 330 ft. from N and 330 ft. from E of W half of SE, Sec. 13, Blk. 18 ..... Shut down 725 ft.

Taylor-Link Oil Co.'s No. 7 University Land, 330 ft. S and W of NE cor. of W half, Sec. 31, Blk. 16, University Land ..... Top pay 947 ft.; shut down 952 ft.; flowed 71 bbls. first hour.

Taylor-Link Oil Co.'s No. 8 University, 330 ft. N and 2,310 ft. W of SE cor. Sec. 31, Blk. 16, University Land ..... Shut down 963½ ft.

Taylor-Link Oil Co.'s No. 9 University, 990 ft. N and 2,310 ft. W of SE Sec. 31, Blk. 16, University Land .. Drlg. 440 ft.

The Texas Company's No. 2 McDonald, 330 ft. N and 775 ft. W SE cor. SW Sec. 46, Blk. 12, H.&G.N.R.R. Sur. ..... Rigged up.

The Texas Company's No. 1 Graef, 2,329 ft. from N and 2,114 ft. from E of Sec. 44½, Blk. 12, H.&G.N.R.R. Sur. ..... Location.

Tower & McKanna's No. 1 University, Sec. 14, Blk. 16, 2,310 ft. from N and E ..... Fishing 2,049 ft.

Trees Oil Co.'s No. 2 Trees, 330 ft. from N and W of SE cor. Sec. 43, Blk. 8, H.&G.N.R.R. Sur. ..... Drlg. 2,710 ft. in brown lime.

Trees Oil Co.'s No. 3 Trees, 330 ft. from S and W of Sec. 90, Blk. 8, H.&G.N. ..... Cellar.

R. D. Webb's No. 2 fee, 1,665 ft. from N and 951 ft. from E line of Sec. 312, L. P. Scott Sur. ..... Hole full sulphur water 1,600 ft.; shut down 1,610 ft.

World Oil Co.'s No. 1 University, 330 ft. from N and 2,310 ft. from E of Sec. 31, Blk. 16, University Land .. 6,000,000 ft. gas 1,630 ft.; spray 10 bbls. oil; drlg. 1,643 ft.

Zoch et al's No. 1 Cordova Union Land Co., C of SW Sec. 81, Blk. 11, H.&G.N. ..... Drlg. 512 ft.

PRESIDIO COUNTY

L. C. Brite's No. 4 Brite, 271 ft. from N, 1,188 ft. from E, Sec. 245, Blk. 4 ..... Shut down 670 ft.

Eastland Oil Co.'s No. 1 Tootle, C Sec. 17, Blk. 1, D.P. R.R. Sur. ..... Spudded; shut down.

T. P. Coal & Oil Co.'s No. 1 Bogel, 330 ft. S and W, Sec. 83, Blk. 8, G.H.&S.A. ..... Underreaming 10-inch casing 2,378 ft.

REAGAN COUNTY

Big Lake Oil Co.'s No. 1-C University, 2,598 ft. S and 250 ft. W of NE cor., Sec. 1, Blk. 2, University Land .. Top pay 2,903 ft.; 1,000 ft. fluid in hole; top pay 6,807 ft.; drlg. 7,015 ft., black lime.

Big Lake Oil Co.'s No. 4-C University, 1,120 ft. from N and 1,096 ft. from E of Sec. 1, Blk. 2 ..... Showing oil and gas at 8,220 ft.; flowed 230 bbls. in 18 hrs.; 6,000,000 ft. gas.

Texon Oil & Land Co.'s No. 2-B University, 4,655 ft. from S, 250 ft. from W Sec. 36, Blk. 9 ..... Drlg. 100 ft.

NEWLY DESIGNED

for Metering Highly Corrosive Liquids

Duriron Fitted—Type G

This pump more nearly approaches the solution of the difficulties encountered in feeding acids in any degree of concentration—giving a high degree of immunity from corrosion. Blue prints and particulars on request.

HILLS-McCANNA CO.
2351 Nelson St.—*Chicago*

Kemrow Co.'s No. 1 Sawyer Cattle Co., 1,320 ft. from N and 1,980 ft. from E line, Sec. 8, J. G. Robinson Sur. ..... Location.
Texon Oil & Land Co.'s No. 3-B University, 2,240 ft. from S, 920 ft. from W Sec. 36, Blk. 9 ..... Rigging up.
Thomas & Brann et al's No. 1 Hughes, C NE of Sec. 7, Blk. 1, T.C.R.R. Sur. ..... Drlg. 460 ft.

REEVES COUNTY

Mac Best et al's No. 1 McKinney, 400 ft. from N line, 1,030 ft. from E line, Sec. 26, Blk. C-18 ..... Total depth 440 ft.; running 6-in. casing 416 ft.
Exploration Co.'s No. 1 A. A. Kinney, 1,500 ft. W. of NE cor. Sec. 26, Blk. C-18, Public School Land, elev. 2,847 ft. ..... Shut down 2,990 ft.
H. T. Hansford's No. 1 Williams, 150 ft. from S and W, Sec. 17, Blk. 6, H.&G.N. ..... Spudded and shut down.
Black & Fink's No. 1 Brooks, 1,980 ft. N and 660 ft. W, Sec. 16, Blk. 59 ..... Shut down 500 ft.
Southern Crude O. P. Co.'s No. 1 Kloh-Rumsey, 2,310 ft. N and W SE cor., Sec. 23, Blk. 51 ..... Drlg. 4,760 ft.
David R. Thompson's No. 1 A. A. Eddins, Sec. 9, Blk. C-1 ..... Drlg. by casing 5,490 ft.

RUNNELS COUNTY

Gibson & Johnson's No. 1 Johnson, 2,310 ft. N and 1,650 ft. W of SE cor., Sec. 150, E.T.R.R. Sur. ..... Location.
Gibson & Johnson's No. 2 Serratt, 2,310 ft. from S and 1,650 ft. from E of Sec. 150, E.T.R.R. Sur. ..... Rig.
Gibson-Johnson's No. 1 Woods, Sec. 529, 2,600 ft. from S and 300 ft. from E, T. T. Williams Sur. ..... Drlg. 2,110 ft.
Vacuum Oil Co.'s No. 4 McMillan, 555 ft. S and 717 ft. W of NE cor., Lot 22, Domingo Diaz Sur., No. 532 .. Location.

SCHLEICHER COUNTY

Fort McKavet's No. 1 Tisdale, Sec. 1,499, River Section, 3,630 ft. from S, 150 ft. from W ..... Set 6-in. casing 3,023 ft.; shut down 3,500 ft.
Interstate's No. 1 Whitten, 1,320 ft. from N and W, Sec. 35, Blk. LL, T.C.R.R. Sur. ..... Hole slopped over with oil at 4,925 ft.; made one good flow; set 6-in. casing 5,050 ft.; drlg. 5,565 ft.
George Wilson's No. 1 Page, Sec. 40, Blk. L, 1,290 ft. from N, 1,470 ft. from W, G.H.&S.A.R.R. ..... Rigging up.

SCURRY COUNTY

Byrd & Harmon's No. 1 Murphy, Jr., 330 ft. from N and E of Sec. 114, Blk. 97, H.&T.C. ..... Shut down 1,732 ft.
Camp Spring Oil & Ref. Co.'s No. 3 Guinn, 1,300 ft. from S, 300 ft. from E, Sec. 12, Blk. 3, H.&T.C.R.R. Sur ..... Shut down 2,567 ft.
Cottingham & Briscoe's No 1 Trees, C SE Sec. 147, Blk. 97 ..... Drlg. 3,025 ft.
I. B. Mimms et al's No. 1 J. J. Koonsman' Sec. 216, Blk. 2, H.&T.C. Sur. ..... Spudded and shut down 300 ft.
G. E. Dickman and R. B. Pender et al's No. 1 F. C. Davis, 1,000 ft. N and 1,770 ft. W of SE cor. of Sec. 275, Blk. 2, H.&T.C. Sur. ..... Drlg. up lugs 4,065 ft.
E. L. Smith Oil Co.'s No. 1 Moore, 1,320 ft. from S and W Sec. 379, Blk. 97 ..... Rigging up.

STERLING COUNTY

Sherwood B. Owen's No. 1 Tweedie, 1,980 ft. from N and 1,320 ft. from E of Sec. 10, Blk. T, T.&P. ..... Location.

SUTTON COUNTY

Independent Oil & Gas Co.'s No. 1 Willson, Sec. 30, Blk. A, 1,650 ft. from N, 2,310 ft. from W ..... Spudded and shut down.
Independent & Sun Oil Co.'s No. 1 Allison, Sec. 39, Blk. A, 200 ft. from N and 1,000 ft. from W ..... Drlg. 2,860 ft.
Phillips Pet. Co.'s No. 1 A. G. Holman, 2,310 ft. S and 330 ft. W NE cor., Sec. 25, G.C.S.D.&N.G.R.R. Sur. ..... Fishing 6,635 ft.; making 1,500,000 ft. gas 6,635 ft.
L. G. Priest's No. 1 Allison, 1,320 ft. N and E of SW cor., Sec. 52, Blk. A, T.&P. Sur. ..... Show oil 3,625 ft.; increase at 3,690 ft.; total depth 4,020 ft.

TAYLOR COUNTY

Adams and others' No. 1 Lowe, 150 ft. from N and W of Sec. 19, League 120, Guadalupe Sur. ..... Location.
Condor Pet. Co.'s No. 1 Allen, C of NW Sec. 220, Blk. 64, H.T.C.R.R. Sur. ..... Location.
John B. Jameson's No. 1 Webb, 1,170 ft. S and W of NE cor. Sec. 46, Lunatic Asylum Land ..... Show oil 4,917 ft.; shut down 4,960 ft.

TERRELL COUNTY

Big Bend Oil Co.'s No. 1 Bassett, C NW Sec. 155, Blk. D, M.K.&T.R.R. Sur. ..... Shut down 1,150 ft.
Keck Pecos Trust Co.'s No. 1 Hamilton, C Sec. 6, Georgetown Ry. Sur. ..... Shut down 2,835 ft.
Mrs. J. B. McPhee's No. 1 Sam Belt, C Sec. 78, Blk. D-7, E.L.R.R. Sur. ..... Shut down 880 ft.
Milham Exploration Co.'s No. 1 Bassett, Sec. 76, Blk. Y, W. E. Robertson Sur. ..... Cem. 6⅝-in. casing 3,986 ft.; shut down 5,490 ft.
Transcontinental Oil Co.'s No. 1 Goode, 2,152 ft. from E and 330 ft. from S Sec. 26, Blk. 161, G.C.&S.F.R.R. .. Material.
Woodley & Jones' No. 1 Pankenham, C SE NW Sec. 43, Blk. B-2, C.C.S.D.&N.G.R.R. Sur. ..... Shut down 625 ft.

TERRY COUNTY

Kingsland, O. P. Co.'s No. 1 Brownfield, C NW SW SW Sec. 7, Blk. 1-A, E.L.R.R. Sur. ..... Fishing bailer 5,080 ft.

TOM GREEN COUNTY

Cannon et al's No. 1 Rust, 990 ft. S, 990 ft. W of NE cor. of Sec. 745 ..... Rig.
Fitzgerald & Taliaferro's No. 1 Bennett, C SW Sec. 1,628, E. H. Ringer ..... Shut down 2,430 ft.
Fuhrman Pet. Co.'s No. 1 Wardlaw, 2,650 ft. from N and E of Sec. 6, Blk. 17, H.&T.C. ..... Location.

UPTON COUNTY

Dixie Oil Co.'s No. 32 Burleson, 330 ft. S and 1,650 ft. W of NE cor. John Nidever Sur. ..... Drlg. 1,931 ft.
Gulf Prod. Co.'s No. 3-B Hughes, 160 ft. N and 161 ft. W of most southerly SE cor. of their 200-acre lease "B" out of Wm. Teen Sur. ..... Location.
Pure Oil Co.'s No. 2 Hughes, Sec. 4, 150 ft. from N and W line of lease ..... Top salt 590 ft.; show oil 2,275 ft. total depth 2,310 ft.; top pay 2,270 ft.; flowed and swabbed 357 bbls. before shot; well dead.
Pure Oil Co.'s No. 3 Hughes, 150 ft. S and 767 ft. E of NW of their 300-ac., Sec. 4, Wm. Teer Sur. ..... Location.
Texas Pacific C. & O. Co.'s No. 14-A Lane, 990 ft. N and 2,310 ft. W SE cor. Sec. 5, G.C.&S.F. ..... Location.
Texas Pacific Coal & Oil Co.'s No. 15-A Lane, 330 ft. N and 1,650 ft. W of SE cor. Sec. 5, G.C.&S.F.R.R. Sur. .. Drlg. 1,810 ft.
T. P. Coal & Oil Co.'s No. 1 Sherek, 330 ft. from S and E of Sec. 1, Blk. 3, M-K-T ..... Top pay 2,420 ft.; swabbed 400 bbls. oil in 12 hrs.; shut down 2,490 ft.

VAL VERDE COUNTY

Independent Operators' No. 1 Whitehead, SE SE Sec. 30, Blk. 4, I.&G.N. Sur., elev. 1,175 ft. ..... Shut down 4,850 ft.
O. O. Owens, No. 1 Mills, Sec. 128, Blk. 1, I.&G.N. Sur., elev. 2,130 ft. ..... Gas sand 2,491-2,520 ft.; tested 125,700 ft. gas; reset 8-in. 2,511 ft.; reaming; total depth 4,250 ft.
Phantom Oil Co.'s No. 1 Ingram, 175 ft. W of E line and 300 ft. N of S line Sec. 44, Blk. D-8, E.L.&R.R. Sur. .. Drlg. 737 ft.
Valvert Oil Corp.'s No. 1 Bassett, C NE, Sec. 47, Blk. Y.. Set 15½-in. casing 767 ft.; set 10-in. casing 1,510 ft.; shut down 4,009 ft.

WARD COUNTY

Atlantic et al's No. 1 Dorr, 1,730 ft. S, 990 ft. W, Sec. 2, J. Howe ..... Total depth 145 ft.; fishing 15 in casing; shut down.
Atlantic Oil and Delmar Oil Co.'s No. 4 Hayzlett, 2,490 ft. SE NW and 1,470 ft. NE of SW line Sec. 17, Blk. 5, H.&T.C.R.R. Sur. ..... Drlg. 2,410 ft.
Atlantic Oil and Delmar Oil Co.'s No. 5 Hayzlett, 2,420 ft. SW of NE line, 2,050 ft. NW SE of Sec. 17, Blk. 5, H.&T.C.R.R. ..... Top salt 755 ft.; cem. 8-in. casing 775 ft.; drlg. 1,695 ft.
Continental Oil Co.'s No. 2 Sealey, 330 ft. S and W, Sec. 81, Blk. A, G.M.M.&A. Sur. ..... Top brown lime 2,280 ft.; oil pay 3,135 ft.; second oil pay 3,210-15 ft.; increase 3,230 ft.; total depth 3,358 ft.; plugged back 3,250 ft.; 1 bailer oil and 3 bailers water per hour; shot 150 qts. 3,210-35 ft.; 900 ft. fluid in 12 hrs.
Gulf Prod. Co.'s No. 2 Hutchins, 330 ft. N and E, Sec. 7, Blk. O ..... Top salt 1,240 ft.; top pay 2,529 ft.; total depth 3,012 ft., lime shells and sand; flowed 190 bbls. daily.
Gulf Prod. Co.'s No. 7 O'Brien, 330 ft. S and W Sec. 22, Blk. F, G.M.M.B.&A. Sur. ..... Drlg. 2,133 ft., hard anhydrite.
Gulf Prod. Co.'s No. 3 Wristen Bros., 220 ft. NE of SW and 220 ft. SE of NW Sec. 18, Blk. 5, H.&T.C. ..... Show gas 1,960-70 ft.; filling up with sulphur water 2,520-27 ft.; total depth 2,545 ft.; shut down for orders.
L. C. Harrison et al's No. 1 Wristen, 990 ft. from S and W lines of Sec. 26, Blk. B-28 ..... Top salt 700 ft.; total depth 1,990 ft.
J. H. L. Oil Co.'s No. 3 Hayzlett, 220 ft. N and W Sec. 17, Blk. 5, H.&T.C. ..... Rig.
E. B. Lovelace et al's No. 1 Redman, 1,980 ft. NE of SW line and 1,980 ft. SE of NW line, Sec. 162, Blk. 34, H.&T.C.R.R. ..... Total depth 1,180 ft.
Penn & Atlantic's No. 1 Pecos Mercantile Co., Sec. 16, Blk. 34 ..... Salt water and oil 2,584-87 ft., shot 40 qts. 2,345-98 ft.; swabbing and flowing 156 bbls. daily; total depth 2,621 ft.
Penn & Atlantic's No. 2 Bennett, 2,310 ft. S line, 1,650 ft. W line, Sec. 16, Blk. 34, H.&T.C.R.R. Sur. ..... Moving in.
Penn & Atlantic's No. 1 Cooper, 330 ft. from NE and 990 ft. from NW of Sec. 43, Blk. 34, H.&T.C. .. Location.
Shell Pet. Corp.'s No. 1 Owen et al, 220 ft. NW of SE line, 220 ft. SW of NE line, Sec. 16, Blk. 5, H.&T.C. .. Top salt 775 ft.; show oil and gas 2,485 ft.; shut down 2,690 ft.; one-half bailer oil; drlg. 2,790 ft.
Shipley's No. 3 Hayzlett, 2,490 ft. S, 1,470 ft. W Sec. 17, Blk. 5 ..... Top salt 725 ft.; 2 bbls. oil 2,489-2,500 ft. sandy lime.
Shipley et al's No. 4 Hayzlett, 2,050 ft. NW of SE and 2,420 ft. NE of SW line of Sec. 17, Blk. 5, H.&T.C. R.R. Sur. ..... Top salt 720 ft.; shut down 2,517 ft.
Shipley et al's No. 5 Hayzlett, assume common line Secs. 16 and 17 is N and S 220 ft. S and 1,910 ft. W Sec. 17, Blk. 5 ..... Rigging up standard tools.
Shipley et al's No. 1 Monroe, 330 ft. SE SW, Sec. 3, Blk. 1 ..... Shut down 566 ft. for 10-in. casing.
Sun Oil Co.'s No. 1 Sealy, 330 ft. from N and E of Sec. 88, Blk. F, G.M.M.B.&A. Sur. ..... Location.
Sun Oil Co.'s No. 2 Sealy, 2,310 ft. from N and 330 ft. from W of Sec. 52, Blk. F, G.M.M.B.&A. Sur. ..... Location.

WINKLER COUNTY

V. T. Bolin's No. 2 Brown et al, 2,000 ft. S and W of NE, Sec. 4, Blk. B-5, Public School Land ..... Top salt 1,300 ft.; shut down 2,832 ft.
Bashara et al's No. 2 Bashara, 990 ft. S, 2,310 ft. E, Sec. 17, Blk. B-3, Public School Land ..... Derrick.
Cinderella Syndicate's No. 1 Hendricks, 330 ft. N, 1,650 ft. W Sec. 42, Blk. 26, Public School Land .... Total depth 150 ft.; building rig.
Cranfill & Pickrell's No. 2 Hutchins, 2,310 ft. S and W Sec. 47, Blk. 26 ..... Running 6-in. 2,722 ft., gray lime; show gas 2,280 ft.; increase 2,395 ft.; est. 5,000,000 ft. gas; shot 400 qts. 2,860-2,976 ft.; flowing 352 bbls. first 14 hrs.
Gulf Prod. Co.'s No. 2-B Lum Daugherty, 2,310 ft. from N and 1,320 ft. W Sec. 22, Blk. 26, P.S.L. ..... Top lime 2,495 ft.; show oil 2,680-85 ft.; pay 2,698-2,700 ft.; flow 50 bbls. hourly, 88 per cent water; fishing; total depth 3,111 ft.; hole full water 3,020-25 ft.
Humble O. & R. Co.'s No. 1-D Hendricks, 330 ft. from S, 2,310 ft. from W of Sec. 41, Blk. 26 ..... Top lime 2,770 ft.; total depth 2,772 ft.; cem. 6⅝-in. casing 2,765 ft.; rigging up standard.
Humble Oil & Ref. Co.'s No. 2 Watton, 2,310 ft. from N and W of Sec. 47, Blk. 26 ..... Location.
Liner Drlg. Co.'s No. 1 Campbell, 330 ft. from N and E cor., Sec. 2, Blk. B-5 ..... Top brown lime 2,510 ft.; drlg. 2,980 ft.
Southern Crude O. P. Co.'s No. 4 Hendricks T-90, 2,310 ft. S and E of Sec. 47, Blk. 26 ..... Top lime 2,242 ft.; top pay 2,310-17 ft.; 18,000,000 ft. gas 2,401-04 ft.; mixing mud to kill gas; estimated 25,000,000 ft. gas; oil show 2,575-78 ft.; total depth 3,005 ft.

WILDCAT OPERATIONS IN TEXAS PANHANDLE

(Continued from Page 70)

Mystery Oil Co.'s No. 1 J. I. Crum, SE cor. NE, Sec. 333, Blk. M-6, S.K.&K. Sur. ..... S.D. 510 ft. for csg.

CHILDRESS COUNTY

C. L. Sloane et als' No. 1 B. P. Smith Sur. 49, F. P. Knott lands ..... S.D. 4,675 ft.

COCHRAN COUNTY

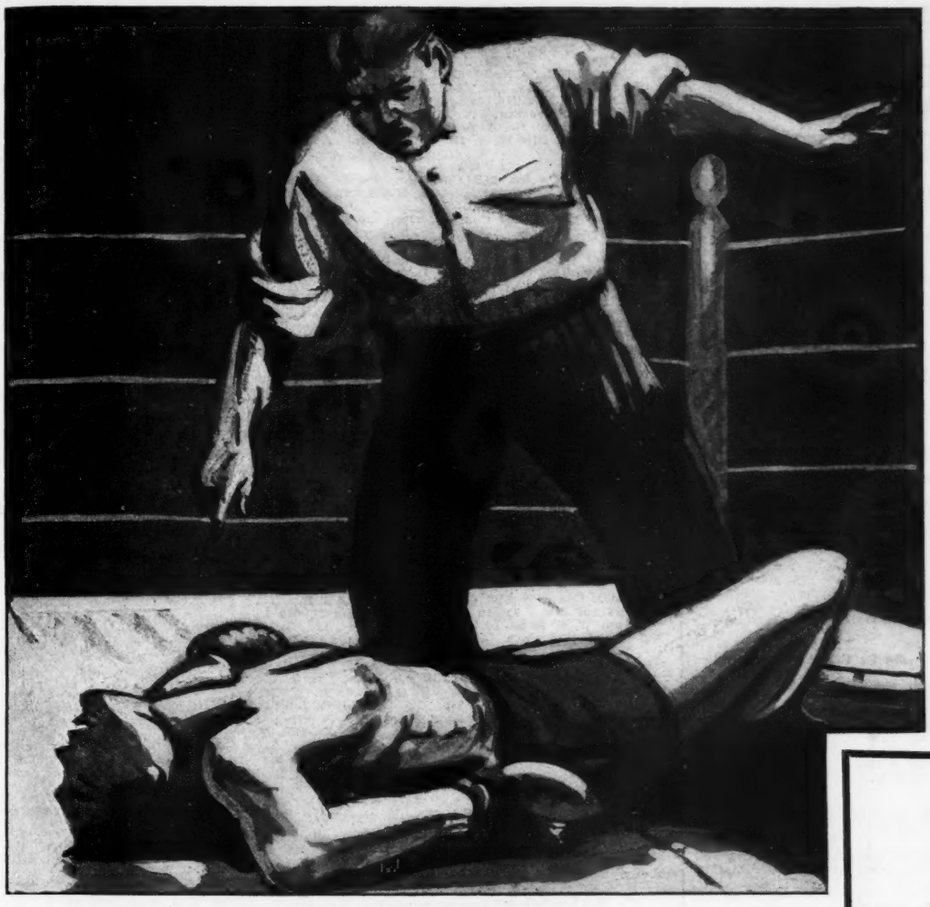
Continental Oil Co.'s No. 1 Slaughter-A, 330 ft. from W. 430 ft. from S lines, League 130, Carson County School land ..... Small show gas 4,745-50 ft; 3,000 ft. oil in hole 4,883 ft; T.D. 5,001 ft; P.B. 4,900 ft; oil pay 4,873-88 ft; swbd. 65 bbls. oil and 5 bbls. wtr; shot 150 qts. from 4,735-70 ft; no results.
Westbrook et als' No. 1 Slaughter, 400 ft. from S and E, Labour 67, League 118, Knox Co. School Lands .. Drlg. 2,550 ft.

DONLEY COUNTY

Blue Bonnett Oil Co.'s No. 1 Ball, 1,075 ft. from N line, 985 ft. from E line, Sec. 22, Blk. E, D.&P.R.R. Sur. T.D. 3,006 ft; contract depth.
Marine Oil Co.'s No. 1 Sawyer, C SW, Sec. 5, Blk. G, G.C.&S.F. Sur. ..... S.D. 3,510 ft.
Southland Oil Co.'s No. 1 Lewis, C SE 40 ac., Sec. 3, Blk. 29, H.&G.N.R.R. Sur. ..... Drlg. 2,520 ft.

GRAY COUNTY

Adams Oil Co.'s No. 4 Morse, 330 ft. S and W, NE cor. Sec. 3, Blk. 26, H.&G.N.R.R. Sur. ..... U.R. 8¼-in. csg; T.D. 1,935 ft.
Alexander and Shell Pet. Corp.'s No. 1 Harrah-McKinney, 330 ft. S and W, NE cor. E½ SE, Sec. 163, Blk. 3, I.&G.N.R.R. Sur. ..... Cmtd. 8¼-in. csg; T.D. 2,550 ft.

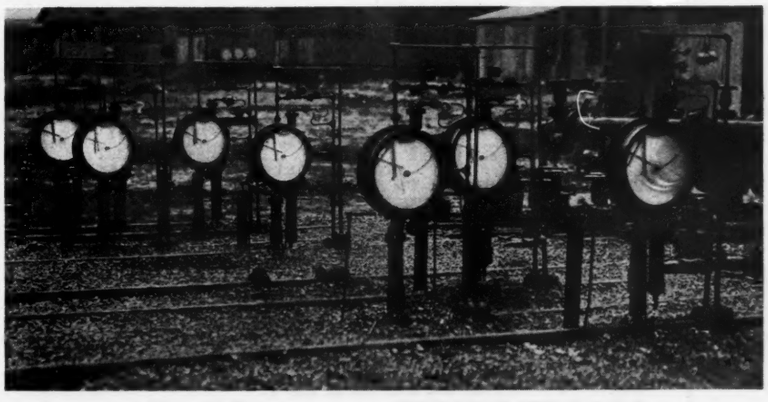


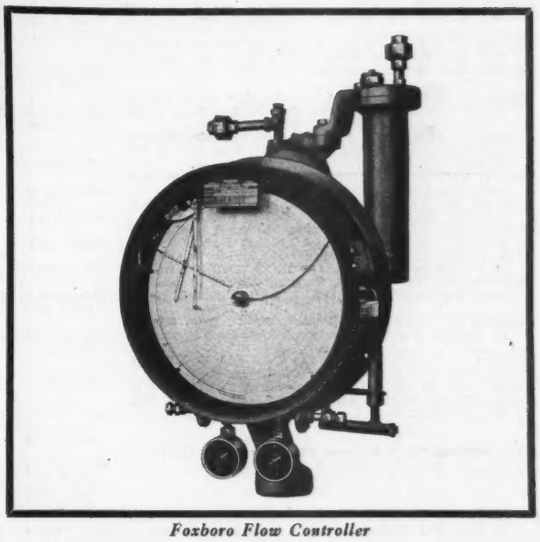
LICKED!

The problem of controlling flow has been licked by Foxboro. That persistent opponent has gone down for all time. Completely knocked out of the oil and gas industry.

With the Foxboro Flow Controller you can, for example, accurately and dependably control the flow (volume) of air or gas to a well on a repressuring job.

Foxboro Flow Controllers, by properly controlling the volume of gas or air to the wells, maintain uniform pressure conditions at the bottom of the well. They prevent the tendency of the well to head up; protect the wells against plugging and by-passing. Speed in repressuring can be practiced with safety.





Foxboro Flow Controller

Foxboro's twenty years of experience in oil field problems made this Flow Controller possible. Over 800 of them in use and giving complete satisfaction prove their practicability. Behind each Instrument is a guarantee that is ironclad. It guarantees permanent calibration, workmanship and material, and performance on the job for which it is designed. Foxboro will even guarantee results with this Flow Controller if sufficient information on the application is given!

Get in touch with the nearest Foxboro Branch Office. A letter will bring full information.

THE FOXBORO COMPANY
Neponset Avenue, Foxboro, Mass., U. S. A.

28 North Guthrie Ave., Tulsa, Okla.
Magnolia Building, Dallas, Texas
J. E. Treacy, Strada Golesti No. 9, Ploesti, Roumania

New York, Chicago, Boston, Philadelphia, Pittsburgh, Cleveland, Rochester, N. Y., Atlanta, Los Angeles, San Francisco, Portland, Ore., Detroit, Salt Lake City

FOXBORO
REG. U. S. PAT. OFF.
THE COMPASS OF INDUSTRY

Instruments for Controlling, Recording and Indicating Temperature, Flow, Humidity and Pressure

Big Gray Oil Co.'s No. 1-A Saunders, 330 ft. N and E, SW cor. E½ NW, Sec. 40, Blk. 3, I.&G.N.R.R. Sur. — Location.

British-American Oil Co.'s No. 2 Purviance, 330 ft. N and E, SW cor. E 160 ac., Sec. 61, Blk. B-2, H.& G.N.R.R. Sur. — Location.

Champlin Ref. and Danciger's No. 3 Cook-Faulkner, 330 ft. S and E, NW cor. W 120 ac. of E 200 ac., Sec. 30, Blk. B-2, H.&G.N.R.R. Sur. — Location.

Constantine et als' No. 1 Crews, 330 ft. S and W, NE cor. SW, Sec. 20, Blk. 30, H.&G.N.R.R. Sur. — Drlg. 1,055 ft.

Danciger O. & R. Co.'s No. 7 Beck, 330 ft. S, 1,650 ft. W, NE cor., Sec. 28, Blk. B-2, H.&G.N. Sur. — T.D. 2,780 ft; T.P. 2,770 ft; I.P. 1,050 bbls.

Danciger et als' No. 11 Jackson, 330 ft. S, 1,320 ft. W, NE cor. NW, Sec. 88, Blk. B-2, H.&G.N. Sur. — T.D. 2,906 ft.

Danciger O. & R. Co.'s No. 1 McLarty, 1,220 ft. from S, 330 ft. from W, W½ NW, Sec. 10, Blk. 1, A.C. H.&B. Sur. — 12,000,000 ft. gas 2,275-2,350 ft; 50,000,000 ft. gas 2,275-2,490 ft; 18,000,000 ft. gas 2,500-2,620 ft; drlg. 3,275 ft; 18,000,000 ft. gas.

Danciger O. & R. Co.'s No. 5 Morse, 330 ft. N and E, SW SW NW, Sec. 1, Blk. 26, H.&G.N.R.R. Sur. — Spudding.

Danciger O. & R. Co.'s No. 1 Shaw, 330 ft. from S, 286 ft. from E of E 39½ ac., NW, Sec. 5, Blk. 1, A. C.H.&B. Sur. — T.D. 2,588 ft; standardizing.

Danciger O. & R. Co.'s No. 1 Williams, 330 ft. from N, 330 ft. from E, S½ NW — Estimated 15,000,000 ft. gas 2,610-70 ft; S.D. 2,720 ft.

Dunlop's No. 4 Morse, 330 ft. N and E SW cor. SW, Sec. 17, Blk. A-9, H.&G.N.R.R. Sur. — T.D. 2,431 ft; cmtd. 8¼-in. csg.

Sines & Reiger's (formerly Eslick et als') No. 1 Mrs. J. A. Hopkins, NW cor. W 80 ac. of SW, Sec. 84, Blk. B-2, H.&T.C. Sur. — S.D. 3,206 ft.

Gardner Bros. and Collins' No. 2 Saunders, 955 ft. from S, 330 ft. from E of W 68 ac. E½ J. G. Eustice Sur. — Location.

Gulf Prod. Co.'s No. 1 Barrett, 967 ft. N and E, SW cor. NE, Sec. 131, Blk. 3, I.&G.N.R.R. Sur. — Location.

Gulf Prod. Co.'s No. 3 Worley-A, 330 ft. N, 1,650 ft. W, SE SW, Sec. 36, Blk. 3, I.&G.N.R.R. Sur. — Temp. abd. at 3,163 ft.

Gulf Prod. Co.'s No. 3 Saunders, 330 ft. S, 990 ft. E, NW cor. its 130-ac. lease out of SW cor., Sec. 40, Blk. 3, I.&G.N.R.R. Sur. — Rigging up.

Guernsey Oil Co.'s No. 1 Pope, 330 ft. from N and W lines, W½ SW, Sec. 173, Blk. 3, I.&G.N. Sur. — Drlg. 2,524 ft.

Guernsey Oil Co.'s No. 1 Vaniman, 330 ft. N and W, E½ NE, Sec. 175, Blk. 3, I.&G.N.R.R. Sur. — Drlg. 1,105 ft.

Haymer O. & G. Co.'s No. 1 Morse, 330 ft. each way out of SE cor. E½ SE, Sec. 45, Blk. A-9, H.&G.N. Sur. — S.D. 350 ft; to skid rig north.

Herragan Oil Co.'s No. 1 Bradford, 330 ft. from N. 990 ft. from E, Sec. 123, Blk. B-2 — First show gas 2,475-80 ft; 15,-000,000 ft. gas 2,515-40 ft; drlg. 3,140 ft; S.O. 2,932-50 ft.

Hinerman Bros.' No. 1-A Taylor, 330 ft. from NE E½ NE, Sec. 8, Blk. H, A. H. Wallace Sur. — Drlg. 2,270 ft.

Humble O. & R. Co.'s No. 1 Chapman, 330 ft. from N and E, NW, Sec. 69, Blk. 25, H.&G.N. Sur. — Drlg. 2,750 ft; 12,000,000 ft. gas 2,680 f...

Humble O. & R. Co.'s No. 3 Jackson, 230 ft. from E line, 550 ft. from N line of E 110.5 ac., Sec. 90, Blk. B-2, H.&G.N.R.R. Sur. — S.G. 2,533 ft; S.O. 2,782 ft; drlg. 3,050 ft.

Humble O. & R. Co.'s No. 4 Jackson, 976 ft. N, 330 ft. E, SW cor. E 95.25 ac., Sec. 90, Blk. B-2, H.&G.N. Sur. — S.G. 2,271 ft; S.D. 2,950 ft; flowed 180 bbls; T.P. 2,882-90 ft; C.O.

Humble O. & R. Co.'s No. 1 Palmer, 330 ft. from N and E lines, of W 100 ac., Sec. 31, Blk. B-2, H.&G. N. Sur. — S.D. 3,120 ft.

Lyon et als' No. 1-A Morse, 330 ft. from S & W. NW NW, Sec. 1, Blk. 26, H.&G.N.R.R. Sur. — Building rig.

Magnolia Pet. Co.'s No. 7 Bowers, 990 ft. S and E, NW cor. NW, Sec. 63, Blk. B-2, H.&G.N.R.R. Sur. — Drlg. 2,968 ft.

Magnolia Pet. Co.'s No. 8 Bowers, 990 ft. N and E, SW NW, Sec. 63, Blk. B-2, H.&G.N.R.R. Sur. — Drlg. 2,680 ft.

Magnolia Pet. Co.'s No. 4 Magnolia, 990 ft. S and 330 ft. W, NE cor. NE, Sec. 11, Blk. 3, I.&G.N.R.R. Sur. — T.D. 1,990 ft; running 10-in. csg.

Magnolia Pet. Co.'s No. 1 Wright, 330 ft. S and W lines, S½ SW, Sec. 13, Blk. 3, I.&G.N. Sur. — 15,000,000 ft. gas 2,707-10 ft; S.D. 2,710 ft.

Magnolia Pet. Co.'s No. 2 Wright, 820 ft. from W, 330 ft. from S, S½ SW, Sec. 13, Blk. 3, I.&G.N. Sur. — S.D. 2,787 ft; swbd. 220 bbls. first 12 hrs.

McAuley et als' No. 3 Morse, 330 ft. S and E, NW cor. S½ NE, Sec. 2, Blk. 26, H.&G.N.R.R. Sur. — Location.

McMan O. & G. Co.'s No. 4 Jackson, 970 ft. N, 330 ft. E, SW cor. W 95.25 ac. of E 190.5 ac., Sec. 90, Blk. B-2, H.&G.N. Sur. — S.O. 2,630 ft; S.G. 2,610-12 ft; drlg. 3,110 ft; 1,000 ft. oil in hole; T.P. 2,880 ft.

Oil Operators' No. 1 Bowers, 330 ft. from N, 330 ft. E, Sec. 93, Blk. B-2, H.&G.N. Sur. — Show oil and gas 2,400-17 ft; S.D. 3,090 ft; S.O. 3,036-55 ft; first gas 2,483 ft; increased at 2,500 ft., 2,544 ft. and 2,950 ft.

Operators Oil Co.'s No. 1 Lovett, 330 ft. from N and W line, W½ NE, Sec. 57, Blk. B-2, H.&G.N. Sur. — Gas 2,390 ft; S.O. 2,837-47 ft; T. D. 3,067 ft; 1,000 ft. oil in hole.

Operators Oil Co.'s No. 5 Cook-Faulkner, 990 ft. N, 330 ft. W, SE W 90 ac., Sec. 30, Blk. B-2, H.&G.N. Sur. — S.D. 2,748 ft; standardizing.

Operators Oil Co.'s No. 6 Cook-Faulkner, 330 ft. S and E, NW cor., Sec. 30, Blk. B-2, H.&G.N.R.R. Sur. — S.G. 2,424 ft. and 2,477 ft; S.D. 2,750 ft.

Operators Oil Co.'s No. 7 Cook-Faulkner, 330 ft. S, 820 ft. E, NW cor., Sec. 30, Blk. B-2, H.&G.N. Sur. — S.G. 2,380 ft; S.D. 2,691 ft.

Operators Oil Co.'s No. 8 Cook-Faulkner, 330 ft. S, 1,310 ft. E, NW cor., Sec. 30, Blk. B-2, H.&G.N.R.R. Sur. — Drlg. 2,800 ft; estimated 40,000,-000, ft. gas 2,750 ft.

Phillips Pet. Co.'s No. 1 Eakin, 330 ft. from S, 330 ft. from W, Sec. 56, Blk. 25, H.&G.N.R.R. Sur. — S.O. 2,245-55 ft; 1,000,000 ft. gas 2,170-2,255 ft; S.D. 4,815 ft.

Phillips Pet. Co.'s No. 1 Jackson, 330 ft. each way from NE cor. NE, Sec. 58, Blk. B-2, H.&G.N.R.R. Sur. — S.O. 2,712-22 ft; 250 ft. oil in hole; set 5-in. csg. 3,018 ft; 7,000,000 ft. gas 3,130 ft; 1,000,000 ft. gas 3,144 ft; T.D. 3,260 ft; P.B. 2,-820 ft; C.O.

Phillips Pet. Co.'s No. 6 Jackson, 330 ft. from N, 990 ft. from E line, S½ NE, Sec. 88, Blk. B-2, H. &G.N.R.R. Sur. — T.D. 3,030 ft.

Phillips Pet. Co.'s No. 6 Palmer, 330 ft. S and W, NE cor., Sec. 31, Blk. 2, H.&G.N.R.R. Sur. — S.D. 2,743 ft.

Plains Drlg. Co.'s No. 1-A Chapman, 330 ft. from S and W, NE, Sec. 10, Blk. 26, H.&G.N. Sur. — S.G. 2,240 ft; 15,000,000 ft. gas 2,-240-90 ft; drlg. 2,650 ft; S.O. 2,550 ft.

Queen Oil Co.'s No. 1 Lovett, 330 ft. N and W, W½ NE, Sec. 35, Blk. B-2, H.&G.N.R.R. Sur. — Rig.

Quillian et als' No. 1 Barrett, 330 ft. from N, 330 ft. from E, Sec. 131, Blk. 3, H.&G.N. Sur. — 20,000,000 ft. gas 2,660-2,705 ft; S.D. 2,850 ft; run. 8¼-in. csg.

Ray et als' No. 1 Noble, 240 ft. from S and 330 ft. from W line, W 80 ac., SW, Sec. 10, Blk. A-6, H.&G. N. Sur. — Drlg. 1,880 ft.

Rierger & Steckoll's No. 1 Bohr, 330 ft. from S and E, Sec. 37, Blk. B-3, H.&G.N. — Drlg. 356 ft.

Shamrock O. & G. Co.'s No. 3 Saunders, 330 ft. N and E, SW E½ SE, Sec. 4, Blk. 1, A.C.H.&B. Sur. — S.D. 2,438 ft.

Shamrock O. & G. Co.'s No. 1 Taylor, 330 ft. each way out of NE cor. NW, Sec. 1, Blk. 2, H.&G.N. Sur. — Fishing 1,490 ft.

Skelly Oil Co.'s No. 1 Chapman, 330 ft. from S and E, S½ NW, Sec. 69, Blk. 25, H.&G.N. Sur. — T.D. 2,675 ft; S.O. 2,645-50 ft.

Skelly Oil Co.'s No. 5 Jackson, 970 ft. N, 330 ft. W, SE cor. W 190 ac. of Sec. 90, Blk. B-2, H.&G.N. Sur. — S.G. 2,572 ft; drlg. 2,980 ft; T.P. 2,920 ft; 3 bbls. per hr.

St. Clair Oil Co.'s No. 1 Dial, 330 ft. S and W, NE cor. SE, Sec. 10, Blk. 25, H.&G.N.R.R. Sur. — Spudded and S.D.

St. Clair Oil Co.'s No. 1 L. S. Stockton, SE cor., Sec. 35, W. R. Lee Sur. — Spudded and S.D.

Stogner Meaders' No. 1 Taylor, 330 ft. from S and E, SW Sec. 7, Blk. H, A. H. Wallace Sur. — 1,000,000 ft. gas 2,490-2,535 ft; drlg. 2,695 ft; 2,000,000 ft. gas; T.P. 2,490 ft.

The Texas Co.'s No. 3-B Chapman, 330 ft. S and E, NW cor. SE, Sec. 69, Blk. 25, H.&G.N.R.R. Sur. — 4,000,000 ft. gas 2,140-50 ft; T.D. 2,655 ft; rebuilding rig.

The Texas Co.'s No. 3 Comb-Worley, 330 ft. N and W, SE cor., Sec. 36, Blk. 3, I.&G.N. Sur. — 4,000,000 ft. gas 2,135-40 ft; S.D. 2,710 ft.

The Texas Co.'s No. 3 McLarty-B, 1,326 ft. S, 660 ft. E, NW E½, Sec. 10, Blk. 1, A.C.H.&B. Sur. — 4,000,000 ft. gas 2,135-40 ft; drlg. 2,492 ft.

The Texas Co.'s No. 14 Saunders, 955 ft. N, 330 ft. W, SE cor. W½ of J. G. Eustis Sur. — S.D. 2,510 ft.

The Texas Co.'s No. 15 Saunders, 330 ft. N and W, SE cor. W½ SE, Sec. 4, Blk. 1, A.C.H.&B. Sur. — S.D. 2,600 ft.

Travis & Rieger's No. 1 Mackie, 330 ft. from N and E, Sec. 114, Blk. B-2, H.&G.N.R.R. Sur. — Drlg. 2,190 ft.

Wright Wilson, trustee's No. 1 Chapman, 175 ft. from S and E line, N½ NW, Sec. 69, Blk. 25, H.&G.N. Sur. — S.D. with S.O. 2,685 ft; cmtd. 8¼-in. csg.

HOCKLEY COUNTY

World Oil Co.'s No. 1 Ellwood, 320 ft. from N and W lines, League 7, Wilbarger County School lands; elevation 3,363 ft; contract depth 5,000 ft. — C.O. 3,250 ft.

HUTCHINSON COUNTY

Alamosa Oil Co.'s No. 4 Sanford, 310 ft. S, 320 ft. W, NE cor. of N 160 ac. of S 240 ac., Sec. 85, Blk. 46, H.&T.C. Sur. — S.O. and wtr. 3,010-11 ft; S.D. 3,-095 ft.

Continental Oil Co.'s No. 1-B Johnson, 330 ft. S and W, NE cor. NW, Sec. 6, Blk. 1, B.&B. Sur. — 10,000,000 ft. gas; running 6-in. csg. 3,142 ft; 1,000 ft. oil in hole 3,088 ft.

Devore Oil Co.'s No. 1 Johnson Bros., 330 ft. from S and E line, NW SW, Sec. 28, Blk. Y, A.&B. Sur. — S.D. 2,950 ft.

Huey et als' No. 3 Smith et al, 330 ft. from N, 660 ft. from W, S 40 ac. of E 100 ac., SE, Sec. 12, Blk. Y. — Fishing 2,702 ft.

Midwest Explo.n. Co.'s No. 3 Moore, 330 ft. N, 330 ft. W, SE NE, Sec. 125, Blk. 4, I.&G.N.R.R. Sur. — Location.

Midwest Explo.n. Co.'s No. 1 Garner et al, 330 ft. N and W, SE cor. NE, Sec. 124, Blk. 4, I.&G.N. Sur. — Drlg. 2,995 ft.

Oates & Jones' No. 1 Jasper, 450 ft. S, 330 ft. W, NE 121-ac. tract, Sec. 26, Blk. M-23, T.C.R.R. Sur. — Location.

O. B. Penney's No. 2 Johnson Bros., 330 ft. from S line, 330 ft. from W line, W½ NE, Sec. 35, Blk. Y, A.&B. Sur. — 31,000,000 ft. gas 1,990 ft; S.D. 3,-060 ft; S.O. 3,040-45 ft; I.P. 60 bbls.

Phillips Pet. Co.'s No. 6 (Florence), 330 ft. each way from S and W lines, E½ — T.D. 2,876 ft; T.P. 2,805 ft; I.P. 70 bbls; shot 54 qts. 2,788-2,838 ft; C.O. 2,876 ft.

Reliance O. & G. Co.'s No. 2 Sanford, 330 ft. S and E, NW W½ of N 80 ac. of S 320 ac., Sec. 83, Blk. 46, H.&T.C. Sur. — Drlg. 2,476 ft.

Skelly Oil Co.'s No. 2 Lee Bivins, 306 ft. from E, 1,242 ft. from S line, S 160 ac. of N 320 ac., Sec. 84, Blk. 46, H.&T.C.R.R. Sur. — U.R. 8-in. csg. 2,705 ft.

Smith & McDaniel's No. 1 Pitcher, 330 ft. from S and E, Sec. 19, Blk. M-21, T.C.R.R. Sur. — Location.

The Texas Co.'s No. 3 Moore, 330 ft. S, 1,338 ft. E, NW cor. SW, Sec. 125, Blk. 4, I.&G.N.R.R. Sur. — Drlg. 1,700 ft.

The Texas Co.'s No. 4 J. L. Moore, 330 ft. S and W, NE cor. SW, Sec. 125, Blk. 4, I.&G.N.R.R. Sur. — Location.

Travelers Oil Co.'s No. 2 Cockrell, 350 ft. from E and S line, Sec. 8, Blk. B-3, D.&S.E. Sur. — 1,000,000 ft. gas 2,610-2,770 ft; T.D. 3,039 ft; T.P. 3,010-39 ft; averaging 60 bbls. daily.

LAMB COUNTY

Graham O. & G. Co. et als' No. 1 Ellwood, CWL, Sec. 9, Blk. T, T. A. Thompson Sur. — S.D. 3,635 ft.

LIPSCOMB COUNTY

Brown et als' No. 1 Box T Ranch, SW NE, Sec. 612, H.&T.C. Sur. — Fishing 3,625 ft.

Okla. Public Service Co.'s No. 1 C. W. Jones, NE SW, Sec. 100, H.&T.C. Sur. — S.D. 4,790 ft.

LUBBOCK COUNTY

Center Oil Co.'s No. 1 Bowles Ranch — Small S.O. 1,133-40 ft; fishing 4,-167 ft.

MOORE COUNTY

Amarillo Oil Co.'s No. 1 Perkins-A, 330 ft. each way out of NW cor. NE, Sec. 76, Blk. 3 — Drlg. 3,375 ft.

Canadian River Gas Co.'s No. 1-C Sneed, 660 ft. from N and E, SW, Sec. 46, Blk. 6-T, T.&N.O.R.R. Sur. — Cellar.

Dana O. & G. Co.'s No. 1 Anthony, C NW, Sec. 260, Blk. 44, H.&T.C.R.R. Sur. — Drlg. 2,691 ft.

Fritch O. & G. Co.'s No. 1 Lee Bivins, C N 40 ac. of N 160 ac., Sec. 4, Geo. Mahan Sur. — 2,000,000 ft. gas 1,550-65 ft; S.D. 2,225 ft.

Red River Gas Co.'s No. 1 J. M. Shelton, 330 ft. each way from SE cor., Sec. 52, Blk. 3, G.&M. Sur. — S.D. 1,778 ft.

MOTLEY COUNTY

Explto. Co.'s No. 5 Matador, C, Sec. 45, Blk. J-B, C, B.&C.N.G.R.R. Sur. — Drlg. 3,310 ft.

Explto. Co.'s No. 6 Matador, 330 ft. from N line, 330 ft. from E line, Sec. 132, Blk. M — Drlg. 3,650 ft.

Matador Oil Corp.'s No. 1 Owens, C NE, Sec. 10, Blk. G, B.&B. Sur. — S.D. 580 ft.

POTTER COUNTY

Canadian River Gas Co.'s No. 1 Allison "A," 386 ft. from E line, 5,439 ft. from S line, Sec. 1, W. T. Palmer Sur. — Drlg. 2,030 ft.

RANDALL COUNTY

W. A. Patterson's No. 1 Palo Duro, Sec. 60, Blk. K-14 — S.D. 1,250 ft.

ROBERTS COUNTY

Big Bend Oil Co.'s No. 1 Ledrick, Sec. 7, Blk. 5-A — T.D. 5,992 ft; shot 10 qts. 5,270-93 ft; S.O. 5,288 ft; C.O.

WHEELER COUNTY

Lela O. & G. Co.'s No. 1 Williams & Laycock, 330 ft. from S, 209 ft. from W, W½ NW, Sec. 20, Blk. A-8, H.&G.N. Sur. — Fishing 1,755 ft.

Magnolia Pet. Co.'s No. 2 Laycock, 680 ft. N, 700 ft. E, SW cor. S½ SW, Sec. 10, Blk. 27, H.&G.N.R.R. Sur. — Drlg. 310 ft.

Martin & Debaus' No. 1-A Close, C SE NE, Sec. 83, Blk. 23, H.&G.N.R.R. Sur. — Drlg. 1,200 ft.

Staley-Wynne's No. 1 Hicks, C NW SE, Sec. 53, Blk. 17, H.&G.N.R.R. Sur. — Drlg. 1,230 ft.

The Texas Co.'s No. 1 Cuddleback, C SE SE, Sec. 18, Blk. 24, H.&G.N. Sur. — Drlg. 1,890 ft.

Upham Gas Co.'s No. 5 Close-Gooch, 30 ft. N, 660 ft. E, SW cor. SW NW, Sec. 81, Blk. 23, H.&G.N.R.R. Sur. — Location.

Upham's No. 1 Cuddleback, C SE SE, Sec. 2, Blk. 24, H.&G.N.R.R. Sur. — Cellar.

Vaughn et als' No. 3 Ackley, 330 ft. from N, 330 ft. from W, Sec. 4, Blk. 27, H.&G.N. Sur. — T.D. 1,840 ft; 5,000,000 ft. gas 1,-660-1,770 ft.

Wischkamper et als' No. 1 Curry, C NE SE, Sec. 53, Blk. 23, H.&G.N. Sur. — 10,000,000 ft. gas 1,750-90 ft; fishing 1,850 ft; 10,000,000 ft. gas; T.P. 1,790-1,805 ft.

WEST TEXAS FIELDS

(Continued from Page 69)

Block 33, Township 2-S, T.P.R.R. Survey, was drilled to a total depth of 2,300 feet, topped the pay at 2,161 feet and had an initial production of 671 bbls. Landreth Production Corp.'s No. 1 Huston, located Section 29, Block 35, Township 2-S, was dry and abandoned at 3,465 feet. E. L. Smith's No. 1 Coffee, located 330 feet from north and 1,650 feet from east Section 22, Block 33, Township 2-S, T.&P.R.R. Survey, topped the pay at 2,095 feet, topped the lime at 2,045 feet, was drilled to a total depth of 2,255 feet and had an initial production of 1,440 bbls. Sun Oil Co.'s No. 3 Phillips, located 2,310 feet from east, 330 feet from south of Section 14, Block 33, Township 2-S, topped the pay at 2,083 feet, topped the lime at 2,080 feet, was drilled to a total depth of 2,300 feet and had an initial production of 50 bbls. hourly.

Howard County

The location was abandoned on the Pure Oil Co.'s No. 2-A Scrivner. Merrick & Lamb's No. 9 Clay, located 660 feet from south, 360 feet from east of Section 126, Block 29, was drilled to a total depth of 3,330 feet, topped the pay at 3,083 feet and had an initial production of 45 bbls.

Reagan County

Skelly Oil Co.'s No. 4 University, located 990 feet west, 660 feet north of No. 2, Section 33, Block 8, was drilled to a total depth of 3,094 feet, was plugged back to 3,085 feet and topped the pay at 3,051 feet.

Pecos County

California Co.'s No. 5 Smith, located Section 21, Block 194, G.C.&S.F.R.R. Survey, was drilled to a total depth of 1,421 feet, topped the pay at 1,316 feet and had an initial production of 479 bbls. in four hours. Gulf Production Co.'s No. 20-B Smith, located Section 22, Block 194, G.C.&S.F.R.R. Survey, topped the pay at 1,310 feet, was drilled to a total depth of 1,815 feet and had an initial production of 284 bbls. hourly. Henshaw's No. 1 University, located Section 13, Block 18, topped the pay at 1,004 feet, was drilled to a total depth of 1,030 feet and had an initial production of 40 bbls. McMan Oil & Gas Co.'s No. 8-C Smith, located Section 25, Block 194, had an initial production of 250 bbls. in 20 hours at 1,540-1,649 feet. Milham Oil Corp.'s No. 1 McDonald, Section 46, Block 11, was dry and abandoned at 1,651 feet. Landreth Production Corp.'s No. 3-B University made 801 bbls. at 1,600-28 feet. Monerief's No. 1 Tippett was dry and abandoned at 1,578 feet.

Daily Average Prouction by Leases
Winkler County
Week Ending November 5

Company, farm, sec., blk.—	Wells	Bbls.
Amerada Pet. Corp.:		
Cowden, 3, B-12	3	16
Atlantic O. P. Co.:		
Hendricks-A, 34, B-5	7	2,441
Hendricks-B, 44, 26	6	620
Hendricks-D, 29, B-5	7	549
Hendricks-E, 41, B-5	6	882
Hendricks-G, 46, 26	7	11
Atlantic O. P. Co.:		
Hendricks-F, 40, 26	12	588
Bankers Prod. Co.:		
Hendricks, 30, B-5	1	...
V. T. Bolin:		
Brown-Altman, 4, B-5	1	4
California Co.:		
Hendricks, 29, B-5	7	647
Cranfill & Reynolds:		
Hendricks-A, 28, B-5	2	241
Hendricks-B, 35, B-5	1	83
Hendricks-C, 33, 26	2	540
Hendricks-E, 33, 26	2	214
Cranfill & Texon:		
Hutchings, 47, 26	1	76
Culbertson Bros.:		
Hendricks, 40, B-5	1	63
Eas.land Oil Co.:		
Hendricks, 35, B-5	2	207
Hendricks-B, 46, 26	1	142
Gulf Prod. Co.:		
Hendricks-A, 34, B-5	13	4,761
Hendricks-B, 45, 26	11	3,024
Hendricks-C, 40, B-5	6	494
Hendricks, 44, 26	3	145
Cowden, 3, B-12	3	582
Humble O. & R. Co.:		
Hendricks-A, 34, B-5	17	5,084
Hendricks-B, 29, B-5	6	1,835
Hendricks-C, 32, 26	8	550
Hendricks-B, 39, 26	3	250
Hendricks-C, 10, B-12	13	7,610
Walton, 48, 26	1	107
Independent O. & G.:		
Hendricks-A, 34, B-5	7	789
Howe-B, 44, 26	3	153
McCabe, 36, B-5	2	187
Vardeman-B, 41, B-5	6	294
Lion Oil Co.:		
Hendricks-A, 41, B-5	11	2,773
Hendricks-B, 34, B-5	13	2,723
Hendricks-C, 45, 26	14	5,573
Hendricks-D, 44, 26	1	114
Magnolia Pet. Co.:		
Hendricks, 29, B-5	8	436
Marland Oil Co.:		
Hendricks, 33, 26	4	659
Hendricks-A, 29, 26	2	99
Hendricks-B, 34, 26	2	4
May Prod. Co.:		
Hendricks, 34, 26	1	10
American Maracaibo:		
Hendricks-A, 28, B-5	1	24
Hendricks-B, 28, B-5	1	43
Mining & Engineering:		
Hendricks, 10, B-12	1	Off
Murchison & Cranfill:		
Hendricks-A, 35, B-5	2	303
Hendricks-B, 35, B-5	3	335
Hendricks-C 35 B-5	1	...
Hendricks-H 35 B-5	1	567
Hendricks-I 34 26	1	31
Republic Production Co:		
Hendricks-B 45 26	12	1,403
Hendricks-A 41 B-5	5	102
Prairie Oil & Gas Co.:		
Hendricks 40 26	6	1,300
Cowden, 3, B-12	6	2,527
Shell Petroleum Corp.:		
Hendricks-A 45 26	5	503
Hendricks-B 29 B-5	5	820
Hendricks-C 29 B-5	7	379
Hendricks-D 41 B-5	3	129
Hendricks-E 40 B-5	3	368
Hendricks-F 46 26	6	268
Hendricks-G 39 26	1	68
Shell-Texas Company:		
Cowden-A 3 B-12	6	1,507
Hendricks 45 26	6	2,219
Hendricks-A 29 B-5	7	1,071
Hendricks-B 40 26	4	233
Hendricks-C 40 26	6	1,303
Hendricks-D 40 26	6	273
Hendricks-E 39 26	2	130
Skelly Oil Co.:		
Hendricks 40 26	12	4,752
Hendricks-B 10 B-12	2	17
Hendricks-C 39 26	1	68
Southern Crude:		
T-67 Hendricks-A 42 B-5	3	124
T-67 Hendricks-3-A 4 B-12	4	375
T-67 Hendricks-B 44 26	5	318
T-67 Hendricks-3-B 33 26	4	631
T-67 Hendricks-C 33 B-5	5	505
T-67 Hendricks-2-D 27 26	5	1,059
T-67 Hendricks-E 42 B-5	4	154
T-67 Hendricks-F 33 B-5	5	449
T-68 Hendricks-3-A 35 B-5	3	100
T-68 Hendricks-B 46 26	2	194
T-88 Hendricks-A 44 26	6	540
T-88 Hendricks-B 4 B-12	2	196
T-88 Hendricks-C 28 B-5	8	1,035
T-88 Hendricks-D 4 B-12	6	3,034
T-88 Hendricks-H 28 B-5	6	1,067
T-88 Hendricks-I 20 B-5	7	434
T-88 Hendricks-J 30 B-5	5	406
T-88 Hendricks-K 41 26	7	1,139
T-88 Hendricks-L 4 B-12	4	417
T-88 Hendricks-M 33 26	34	11,694
T-88 Hendricks-N 28 26	7	1,711
T-88 Hendricks-O 28 26	4	473
T-88 Hendricks-P 28 26	2	321
T-88 Hendricks-Q 27 26	2	821
T-88 Hendricks-R 27 26	3	863
T-88 Hendricks-S 34 26	4	1,528
T-88 Hendricks-T 34 26	7	951
T-88 Hendricks-U 41 26	10	1,133
T-88 Hendricks-V 29 26	1	47
T-88 Hendricks-W 5 B-12	1	252
T-88 Hendricks-CX 21 26	4	1,117
T-89 Hendricks-A 35 B-5	3	160
T-89 Hendricks-B 35 B-5	2	310
T-89 Hendricks-C 35 B-5	3	585
T-89 Hendricks-D 35 B-5	1	113
T-89 Hendricks-E 40 B-5	3	124
T-89 Hendricks-F 40 B-5	2	237
T-89 Hendricks-H 46 26	2	163
T-89 Hendricks-I 10 B-12	2	51
T-89 Hendricks-J 9 B-12	8	905
T-89 Hendricks-L 15 B-12	2	1,110
T-90 Hutchings 47 26	1	175
Texon Oil & Land Co.:		
Hendricks-A 41 B-5	6	171
Hendricks-B 45 26	6	1,471
Winkler O. P. Co..		
Hendricks 33 26	1	8
Total Hendricks Pool	561	105,044
Leck Area		
Atlantic, Kesslar & Logan:		
Leck 3 74	2	89
Amerada Petroleum Corp.:		
Leck 3 74	2	230
Empire Gas & Fuel Co.:		
Daugherty 3 74	3	111
Magnolia Petroleum Co.:		
Scarborough 1 C-22	2	188
Gulf Prod. Co.:		
Scarborough 1 C-22	1	65
Daugherty 3 74	2	584
Shell-Llano Oil Co.:		
Daugherty 1 C-22	5	282
Shell-Danciger:		
Daugherty 3 74	2	83
Skelly Oil Co.:		
Daugherty 22 16	4	1,365
Tidal Oil Co.:		
Scarborough 1 C-22	1	144
Prairie Oil & Gas Co.:		
Leck 16 74	1	438
Daugherty 3 74	1	109
Scarborough 1 C-22	1	55
Warner-Quinlan:		
Leck 3 74	1	400
Total Leck Pool	28	4,143
O'Brien Pool		
Marland Oil Co.:		
Morton-A 10 B-12	1	128
Morton-B 10 B-12	2	104
Wentz Oil Corp.:		
Morton 10 B-12	1	172
Simms Oil Co.:		
Sealy 50 F	1	27
Richardson and others:		
Stockton 50 F	1	94
Total O'Brien Pool	6	525
Total Winkler County	595	109,712

PECOS COUNTY
Week ending October 29, 1929

Company, farm—	Wells	Prod.
M. H. Blank:		
Fee	1	10
California Co.:		
Yates-lease 1	18	9,993
Smith-lease 1 Sec. 37	3	869
Smith-lease 1 Sec. 23	8	2,566
Smith-lease 1 Sec. 21	5	956
Smith-lease 2	3	108
Smith-lease 3	13	2,843
Smith	1	5
Tippett-lease 1	1	31
University	1	59
Con.inental Oil Co.:		
Yates-A	5	1,093
Salvage	..	5,127
University-A	1	129
Cosby Drilling Co.:		
Smith	2	650
Dorn & McGee:		
Pecos Valley	1	26
Grayburg Oil Co.:		
Pecos River Bed	6	356
Salvage	..	247
Gulf Production Co.:		
All leases	41	17,309
Humble Oil & Refining Co.:		
Smith-A	11	2,014
Smith-B	7	1,084
Kirby Petroleum Co.:		
Tippett	2	60
Kirby Petroleum & Edson:		
Tippett	1	225
Mazda & Savoy:		
Smith	2	640
McCarty Oil Co.:		
Gray	1	10
Bennett	1	...
McMan Oil & Gas Co.:		
Smith-A	1	1,634
Smith-B	4	1,473
Smith-C	9	812
Tippett	3	374
Richardson	2	165
McMan & Marland:		
Yates	17	5,374
Mid-Kansas & Transcontinental:		
Yates-A	28	20,345
Yates-B	27	7,091
Salvage	..	233
Yates-C	11	8,466
Salvage	..	233
Yates-D	7	8,072
Yates-E	3	847
Yates-F	4	875
Yates-G	3	1,333
Yates-H	10	8,820
Smith	5	2,196
Smith-Taylor	18	4,602
Landreth Production Co.:		
University-A	2	118
University-C	1	1,328
University-H	1	24
Landreth & World Oil:		
Universi.y-B	3	982
J. D. O'Mara:		
Butz	1	21
Pecos Valley Oil:		
Fee, Sec. 22, Blk. 26	2	64
Phillips Petroleum Corp.:		
Monroe	2	180
Ramsey	3	935
Smith	3	600
Plymouth Petroleum Corp:		
Perry	1	25
Red Bank Oil Co.:		
Smih	5	468
Rowan-Tong & Independent:		
McDonald	1	...
Tippett	11	2,893
Shell Petroleum Co.:		
Smith	11	1,412
Smith-B	1	672
Smith-D	4	831
Smith-E	1	28
Bower-University-C	2	162
Simms Oil Co.:		
Smith	7	6,321
Skelly Oil Co.:		
Tippett	2	235
Taylor-Link:		
University	3	688
Total Pecos Field	354	137,833

PIPE LINE RUNS
October 23 to October 30
Runs Through Trunk Lines

	Last period
Atlantic P. L. Co., Port Arthur, Tex.	37,500
Gulf Pipe Line Co., to coast via Ranger, Tex.	31,501
Humble P. L. Co., Comyn, Tex.	41,703
Humble P. L. Co., Ingleside, Tex.	51,541
Illinois P. L. Co., Del Rio, Tex.	44,414
Magnolia P. L. Co., De Leon, Tex.	27,289
Pasotex P. L Co, El Paso, Tex.	8,107
Shell P. L. Co., Healdton, Okla.	40,615
Shell P. L. Co., Houston, Tex.	24,612
The Texas Company, Houston, Tex.	36,743
Total	344,025

Tank Car Shipments

Thomas & Brann, Grant City	100
Orient Co., McCamey, Tex.	105
American Pet. Co., Pyote, Tex.	5,172
Southern C. O. P. Co., Wickett, Tex.	15,915
Total	21,292

Runs to West Texas Refineries

Amarillo Prod. Co., Pyote, Tex.	Off
Bluebonnett Ref. Co., Wickett, Tex.	701
Burford Ref. Co., Pecos, Tex.	5,562
Col-Tex Ref. Co., Colorado, Tex.	7,000
Cosden Ref. Co., Big Spring, Tex.	6,990
Great Western Ref. Co., Big Spring, Tex.	3,486
Humble Oil & Ref. Co., McCamey, Tex.	5,469
Mid-Tex Ref. Co., Midland, Tex.	1,617
Tonkawa Ref. Co., Pyote, Tex.	1,299
Big Spring Ref. Co., Big Spring, Tex.	1,812
Richardson Ref. Co., Big Spring, Tex.	4,521
Wickett Ref. Co., Pyote, Tex.	175
Total	38,632

Summary

	Previous week	Last week
Pipe line runs through trunk lines	316,299	344,025
Tank car shipments	19,136	21,292
Runs to West Texas refineries	43,435	38,632
Total daily distribution	378,870	403,949
Total daily production	360,684	356,542
Daily average from storage	18,186	47,407

TO CARRY GASOLINE THROUGH PIPE LINE

(Continued from Page 37)

from the coast to the Pittsburgh and Franklin, Pa., refineries of the Atlantic Refining Co. Some of this crude oil came from West Texas fields. It was transported by pipe line from the fields to the Gulf Coast and then by water to the East Coast.

Kerosene by Pipe Line

While the new project will be the first to transport gasoline over long distances the industry at one time had a pipe line system for the movement of kerosene. Independent producers and refiners in the Pennsylvania grade oil fields in 1892 announced that a pipe line for the transportation of kerosene from refineries in the western Pennsylvania oil fields to Marcus Hook, Pa., would be built. The line, known as the United States Pipe Line, was owned 54 per cent by the old Pure Oil Co., which was organized by such well known independents as David Kirk, J. W. Lee, Lewis Emery, Jr., Michael Murphy, W. L. Curtis, Thomas W. Phillips, Louis Walz and others.

The line was designed to transport the product of refineries from Bradford down along the Allegheny River to Oil City. The line was in active use for many years and was only dismantled a few years ago. Two 4-inch lines were originally constructed from Bradford to Wilkes-Barre, a distance of 180 miles, but the line later was extended to Freemansburg, Northampton County, where the oil was loaded on tank cars for Philadelphia and New York. The line was extended south from Bradford to Titusville and refiners at Oil City, Titusville, Tidioute, Warren, Bradford and other points along its route were drawn upon for supplies.

The first shipment of kerosene was made on June 24, 1893, from Titusville to Wilkes-Barre. In August that year the pipe line receipts were 127,199 bbls. and the shipments 77,205 bbls. In the last five months of 1893 320,929 bbls. were shipped east; in 1894, 762,379 bbls.; in 1895, 799,691 bbls.; in 1896, 650,724 bbls.; 1897, 497,491 bbls.; 1898, 593,049 bbls., and in 1899, 713,361 bbls. Much of the kerosene was exported, the Pure Oil Co. having a large distributing business in Europe, particularly in Germany.

The United States Pipe Line Co. continued to transport refined oil to Seaboard points after the Dawes interests took over the old Pure Oil Co., but it outlived its usefulness a few years ago and was discontinued and the pipe in the line advertised for sale.

In its more than 25 years of activity the line proved beyond question the feasibility of transporting refined oil by pipe line. No statistics are readily available which will show the shipments after 1899. The route of the line was from Titusville to Bradford, then across the northern tier of counties to a point north of Wilkes-Barre, thence south to its destination which was finally Marcus Hook, on the Delaware River, whence the Pure Oil Co. made its foreign shipments.

WESTINGHOUSE PIONEER DEAD

Henry Aylett Coles, Atlanta district manager of the Westinghouse Electric and Manufacturing Co., died recently in New Orleans, La., of heart failure. A veteran in the Westinghouse service, he had joined the company while its plant was in Garrison Alley, Pittsburgh. He was born in Tallwood, Va., August 17, 1870.

ROCKY MOUNTAIN AREA

(Continued from Page 60)

run. The total depth is 5,570 feet. The hole has been making large flows of gas from several horizons above the present bottom and on account of the depth and pressure progress had been reduced to only a few feet a day. The 5⅛-inch is at 4,520 feet.

The Utah Southern Oil Co.'s No. 1 King, SE NE SE Section 13-23-20, Salt Valley Dome in Grand County, is shut down for orders at 3,829 feet. It probably will be abandoned. It has not made any new hole for several months on account of trouble with the string of 6¼-inch. It started sidetracking at 2,000 feet, but at 2,500 feet the tools were lost. It was intended to make a deep test in this hole as it was believed to be through the thick beds of salt, but the casing trouble was too difficult to overcome. It is doubtful if another test will be drilled at this time. The Florence Syndicate's No. 1 McCarthy, (formerly Crescent Syndicate) SW cor. Section 27-21-19, Grand County, is bottomed at 2,000 feet and fighting cavy ground. The Diamond Oil Co.'s No. 4, Section 16-8s-5e, Utah County, is bottomed at 1,300 feet and preparing to test a water shutoff which was unsuccessful at the first attempt.

COLORADO

The Phillips Petroleum Co.'s No. 1 Andrews, NW NW Section 3-2s-42, Rosenkrantz structure, Yuma County, Colorado, 2 miles west of the Kansas line, is reaching an interesting stage and the operation is being closely watched as upon the outcome probably will depend considerable wildcatting next year in the plains country. The well is reported drilling at 4,325 feet in an unidentified formation but probably the upper Pennsylvanian. The hole is full of salt water which came in at approximately 3,525-35 feet, just below the 8¼-inch which was set at 3,475 feet. A string of 6⅝-inch casing is being carried and will be set and cemented to make a water shutoff when a suitable landing place is found. In Washington County, M. T. Smith & Sons' No. 1 Middlemist, SW SE Section 14-4s-56, is held up at 1,020 feet waiting for casing. Two snow storms in succession have put the roads in bad shape and one truck was mired down within 2 miles of the well.

The McDeb Drilling Co.'s No. 1 Fitzsimmons, NE Section 7-4s-66, Arapahoe County, is bottomed at 4,061 feet (corrected) and running the 6¼-inch.

In Larimer County, Stanley Barrows' No. 1 Barrows, NW SE Section 7-11-68, Round Butte Dome, set the 5⅛-inch at 2,100 feet, in the base of the Morrison formation, and the Continental Oil Co.'s No. 4 Scott, NE SE Section 6-9n-68, Wellington Dome, is bottomed at 4,125 feet and running the 6¼-inch.

The Continental Oil Co.'s No. 1 Pipe Springs, NE SE Section 27-27-49, Bent County, is reported drilling at 5,100 feet after setting the 5-inch on top of a sand showing water at 5,067 feet.

Las Animas County

In Las Animas County, the Trinidad Development Co.'s No. 1 Flonz, NE SW Section 23-32-63, is drilling at 2,360 feet in the Morrison formation and will go to 2,500 feet before stopping.

In Huerfano County, the Parker Club, Inc.'s No. 1 Fee, Section 4-28-68, is running 6¼-inch at a total depth of 3,760 feet at which depth it is making some gas through water.

A new operation in Fremont County is the Warner-Mosher Drilling Co.'s No. 1 Adamic, NW SE SW Section 1-19-70, in the Canon City district, which spudded on October 25 and is drilling at 160 feet.

The Transcontinental Oil Co.'s No. 1 Glade, C NW Section 30-41-16, Dolores County, extreme southwestern part of the state, is drilling at 4,550 feet.

In Rio Blanco County, the Texas Production Co.'s No. 1 Potter, C NE SW Section 30-2n-96, on the White River structure, is drilling at 5,271 feet and lacks only 9 feet of being a mile deep. Some unexpected conditions have been encountered in this well. Measurements of outcrops some distance away indicated that the Post-Laramie, Laramie and Lewis beds were not in place and that the Wasatch rested on top of the Mesa Verde. The contact with the Mesa Verde was expected at 3,300 feet. The drill disclosed, however, that this abnormality did not exist on the structure and that the formations correlated with those in the Craig district to the north. The bit is working in the Laramie beds, having gone through the Post-Laramie. The Lewis shale is considered about as favorable, if not more so, for oil accumulation as the Wasatch, but the hole is getting deep and it has not yet been decided how much farther it will be carried.

The White Eagle Oil & Refining Co.'s No. 1-A Fordham, Section 9-2s-96, Piceance Creek, which was delayed at 2,815 feet when it encountered gas which became ignited and burned the rig, is about ready to resume. Derrick has been completed and rigging up is in progress.

La Plata County

In La Plata County, in the southwestern corner of the state, the Detroit Oil Association's No. 1 Olbert, NW SW Section 9-35-12, which has been shut down at 1,860 feet for repairs, has received new equipment and is preparing to resume. It is below the Dakota and close to the top of the Permian.

In Jackson County, near the Wyoming line, the Midwest Refining Co.'s No. 21-X Rich, SW NW Section 9-6n-80, Buffalo Creek, is standing at 3,200 feet with the 10-inch cemented on bottom. The Producers & Refiners Corp.'s No. 1 Hendershot, SE NE Section 2-6n-81, Pole Mountain, is drilling at 3,098 feet in hard gray lime. The Niobrara was topped at around 3,067 feet, which indicates that the Dakota probably will be reached at 4,000 feet, or a little deeper.

In Routt County, the Texas Production Co.'s No. 3 Carstarphen, NE NW Section 5-6n-86, Tow Creek, is running 10-inch at 1,880 feet.

In Moffat County, Thomas McLaughlin and others' No. 1 Williams, NW SW Section 2-3n-92, is drilling at 4,287 feet and feeling for the Sundance. The Texas Production Co.'s No. 1 Berlin, SW NE Section 19-12n-100, Bartram Dome, a high on the Hiawatha fold, is bottomed at 2,055 feet, through a sand topped at 2,002 feet which gauged 23,000,000 feet of gas a day, and mudding gas to run and set the 8⅝-inch on top of the sand to shut off water. The water was encountered below a gas sand which was shut off with the 10-inch at 1,630 feet. Two more sands are expected within the next 450 feet.

WYOMING

Rumors of an oil discovery on the Big Sand Draw structure in Fremont County, Wyoming, in the Producers & Refiners Corp.'s No. 9, C SW SW Section 15-32-95, have been current in Denver for several days, but so far confirmation has not been obtained. This structure is a very large dome which has been producing gas from sands in the Frontier formation since 1918. The gas is transported to Casper by the New York Oil Co. in a 43-mile 10-inch line. Several attempts in past years have been made to drill through the gas horizons and test the lower sands for oil, but owing to the large volume of gas and the heavy pressure, none of these has been successful up to this time.

In 1926, the Texas Production Co. started a deep test in the same quarter upon which the Producers & Refiners' No. 9 is located, but went only a short distance below the Frontier. This well encountered the big gas sand at 2,785-2,828 feet. It was mudded off and a second sand was found at 2,855-66 feet and a third was topped at approximately 3,006 feet. At 3,074 feet, two joints of pipe were dropped in the hole and a tedious fishing job ensued. A diamond drill was then installed, but little additional depth was made and drilling stopped at 3,127 feet without reaching the Dakota. It was completed as a gas well.

Last August the Producers & Refiners started its No. 9 not far from the Texas Production Co.'s test. The 12½-inch was cemented at 308 feet. At 2,318 feet, the hole was reported in sand, and last week it was reported shut down at 2,970 feet. Last week it was reported at the same depth, to have been cleaned out and to be coring at 2,975 feet. No information was given as to the formation or what had taken place. The oil rights on this particular tract are held by the Texas Production Co. and the gas rights by the Producers & Refiners Corp.

Salt Creek Completion

A good completion in Salt Creek was reported this week in the Midwest Oil Co.'s No. 13-SD-3, SW Section 26-40-79, which stopped at 2,970 feet in the third Sundance and made an initial production of 2,402 bbls. the first 24 hours without being shot. Another completion was on the Frannie structure in Park County in the Midwest Refining Co.'s No. 1 Rosenberg, NE cor. Section 26-58-98, an offset on the south to No. 36 Kirk-Peters, a producing well. The 8¼-inch was set at 2,744 feet and the well was completed in the Embar at 2,809 feet. It made 95 bbls. first 24 hours natural flow. The Cody Petroleum Co.'s No. 1 Garner, SW cor. NE Section 27-51-101, Oregon Basin Dome in Park County, is pulling casing to abandon at a total depth of 4,580 feet. The location is on the west side of the south dome.

The Argo Oil Co.'s test to the Sundance sand on the Mule Creek structure in eastern Niobrara County in its No. 7 Wehopeso, SW NW Section 19-38-60, is at a critical stage and is drilling at 2,400 feet in red and blue shale. There is enough water in the hole for drilling purposes only.

In Natrona County outside of Salt Creek, the Fargo-Western Oil Co.'s No. 1-A, SW NW Section 2-33-83, Poison Spider, is drilling at 2,420 feet.

In Uinta County, in the southwestern corner of the State, the Winton Oil Co.'s No. 1 Coloma, SE NE Section 23-14-118, is shut down at 1,200 feet with the 8¼-inch at 1,100 feet, and the Park City Oil & Gas Co.'s No. 1 Christensen, Section 6-15-113, is shut down at 1,224 feet with the 8¼-inch at 1,180 feet. The California Co.'s No. 1 Union Pacific, NE NW Section 7-17-116, Muddy Creek, is drilling at 4,412 feet.

Lincoln County

In Lincoln County, the Piney-La Barge Oil Co.'s No. 1, Section 12-28-114, Dry Piney, is drilling below 800 feet in a hard formation believed to be a caprock over the sand. There was considerable gas at 800 feet which caught fire. Charles Lackey, in charge of the operation, was slightly burned.

In Lincoln County, the Mountain Oil Corp.'s No. 1 State, Lot 1 Section 36-25½-115, Wyoming structure, is moving the 84-foot steel derrick to location from the Transcontinental Oil Co.'s deep test in Section 9-26-113, La Barge Field, which has been standing for some time. This operation is a group development on a very large structure with 12,800 acres within the 1,000-foot closing contour. The Midwest Refining Co.'s No. 1 Little Grays River, SE SE Section 25-37-117, is drilling at 1,700 feet after cementing the 10-inch at 1,675 feet.

In Fremont County, the Kinney-Coastal Oil Co.'s No. 1 Dykeman, SE SW Section 22-3n-1w, Pilot Butte Dome, has been shut in after blowing since early in October when it drilled itself in as a 63,000,000-foot gas well. It has not yet been decided whether an attempt will be made to drill deeper, or to put down another test. Total depth is 3,368 feet and the gas is supposed to be coming from the Muddy sand in the top of the Dakota formation. The Texas Production Co.'s No. 1-A State, SW SW Section 36-34-95, Alkali Butte, is rigging up after skidding. Old hole was lost at 620 feet.

In Carbon County, the Midwest Refining Co.'s No. 31, SE Section 1-18-78, Dutton Creek, is drilling at 2,880 feet, and the Producers & Refiners Corp.'s No. 2 Mahoney Dome, SE NW Section 34-26-88, is bottomed at 3,833 feet and preparing to shoot drill stem to loosen.

Sweetwater County

In Sweetwater County, the Mountain Fuel Supply Co. has taken over from the Midwest Refining Co. its No. 1 Pat Sullivan, C SW SW Section 10-16-104, South Baxter Basin and will drill it deeper from 2,690 feet. The Mountain Fuel Supply's No. 1 Hay, NE cor. Section 26-17-104, is cementing the 8⅝-inch on top of the Dakota at 3,503 feet. The hole is making several million feet of gas per day. Same company's No. 1 Murphy, NE NE Section 26-17-104, is standing cemented on top of the Dakota at 3,425 feet, and its No. 1 Cappers, SW NE Section 2-19-104, North Baxter Basin, is cementing the 13⅜-inch on top of the Frontier.

The hole is making around 3,000,000 feet of gas per day. Same company's No. 1 Union Pacific, Section 13-19-104, is shut down after rigging up. Its No. 1 Tucker, NW SE Section 18-13-99, Alkali Creek, is drilling at 3,130 feet, and No. 2 Humphreys, Section 10-12-101, Canon Creek, is rigging up. The Hidden Treasure Oil Co.'s No. 1, Section 32-21-103, North Baxter Basin, is shut down at 1,910 feet to replace National with standard rig.

In Hot Springs County, the Ohio Oil Co.'s No. 1 Smith, Section 9-46-99, Walker Dome, is drilling at 1,170 feet, and the Gebo Consolidated Oil Co.'s No. 1, SW cor. Section 23-44-95, Gebo Dome, is moving in 16-inch casing. Depth at last report was 1,310 feet. The Midwest Refining Co.'s No. 8 Wagonhound, NW SE Section 6-44-98, is bottomed at 1,540 feet and underreaming the 12½-inch.

In Big Horn County, the Ohio Oil Co.'s No. 1 Union Gas, NE cor. Section 22-56-97, Byron Dome, is drilling at 4,436 feet, and the Producers & Refiners Corp.'s No. 3, NW NW Section 24-56-98, Garland Dome, is bottomed at 4,222 feet and drilling on bottom of bailer. The Cody Petroleum Co.'s No. 1 Wilcox, C NW SW Section 27-57-96, Cowley Dome, is bottomed at 3,265 feet and fishing for underreamer lugs.

Oregon Basin Field

In the Oregon Basin Field in Park County, the Cody Petroleum Co.'s No. 1-B Klindt, NE SW Section 6-51-100, (formerly carried as No. 10 Klindt) is drilling at 660 feet, and the Texas Production Co.'s No. 1 Sonners, NW cor. Section 29-51-100, is drilling at 1,780 feet. The Orchard Oil Co.'s No. 1 Owen, SE cor. Section 29-52-100, is drilling at 2,205 feet, and its No. 1 Atherly, SW cor. Section 33-52-100, is drilling at 1,997 feet and carrying the 10-inch at 1,990 feet. Same company's No. 7 Rue, SW NW Section 28-51-100, is standing cemented at 3,570 feet on top of the Embar.

The Lenco Petroleum Co.'s No. 1 Morris, NW NE Section 29-51-100, cemented the 6⅝-inch at 3,681 feet. Outside of Oregon Basin, the California Exploration Co.'s No. 2 Pitchfork, NW NE Section 14-48-102, is waiting for equipment at 2,074 feet, and the Oneida Oil Co.'s No. 1 Beck, SW cor. Section 28-52-100, Shoshone, is drilling at 1,980 feet. The Cody Petroleum Co.'s No. 1 Polecat, SW cor. Section 22-57-98, landed the 13⅜-inch at 2,633 feet and is drilling.

In Niobrara County, the Ohio Oil Co.'s No. 2 Converse Sheep, SW SE SW Section 32-36-65, Lance Creek, a joint operation with the Argo and Buck Creek Oil companies, is being abandoned at 3,090 feet. This well started deepening at 3,000 feet to test the Sundance and other sands, but casing parted two months ago and efforts to fish it out and then to sidetrack were unsuccessful.

MONTANA

A deep test has been started west of Choteau on a location a few miles from the mouth of the Sun River Canyon. The test is down 450 feet, but the Earl Petroleum Co. states that it is to be drilled to 3,500 feet to make a test of all sands on the Black Reek anticline.

Another deep test is starting on the Blackfeet Indian Reservation. It is being drilled by the Hannah Porter Oil Co. and other associated firms from the Sunburst area. It will be drilled to 4,500 feet.

The Canadian Exploration Co. has es-

(Continued on Page 139)

Oklahoma City Area

Oil in this area was first discovered by the Cromwell Oil & Gas Company, now Cromwell-Franklin Oil Company, who found production at 4,389 ft. in their test in the S. W. of the S. E. of Sec. 10-12-3W, which had an initial production of 40 bbls. and is still making 15 bbls. per day. The sand was reached in December, 1926.

Credit for the discovery of the extensive pool lying southeast of the city, belongs to the Indian Territory Illuminating Oil Company and the Foster Petroleum Company, who found the first oil at 6,402 ft. in their joint test in the center of the S. E. of the S. E. of Sec. 24-11-3W, sand having been encountered on Dec. 4, 1928. Drilling was continued to 6,498 ft. when initial production was 4,800 bbls., which increased some weeks later to 5,700 bbls. per day. This well produced around 700,000 bbls. during the first six months.

The first deep test made in this area reached a depth of 7,180 ft. being in the center of the S. W. of the N. E. of the N. E. of Sec. 15-12-3W, completed on May 23, 1929, by the Cromwell-Franklin Oil Company and abandoned as a dry hole.

Potential production of this new pool is believed to be of major proportions, and great credit is due to operators in this area for the splendid spirit of co-operation given in carrying out the curtailment program.

J. R. CERTAIN
Store Manager
at
Oklahoma City

BEAUMONT IRON WORKS COMPANY

Dreadnaught Rotary Drilling and Pumping Equipment

FRICK-REID SERVICE RUBBER BELTING
Our Own Specifications

JONES & LAUGHLIN STEEL CORPORATION
Tubular Goods, Seamless and Lapwelded

J. P. RATIGAN
"Sure Grip" Line of Pumping Equipment

NATIONAL TRANSIT PUMP & MACHINE COMPANY
Pumps and Pipe Line Equipment

WILLIAM POWELL COMPANY
Valves for the Oil Industry

JOSEPH REID GAS ENGINE COMPANY
Two and Four Cycle Gas Engines, Pumping Powers, Refinery Equipment

JOHN A. ROEBLING'S SONS COMPANY
Wire Lines and Welding Wire

ROSSENDALE-REDDAWAY COMPANY
"Camel Hair" and Canvas Stitched Belting

WALWORTH COMPANY
Fittings and Valves for all branches of the Oil Industry

WHITLOCK CORDAGE COMPANY
Manila Cordage, including Drilling Cables, Bull Ropes, Cat Lines, etc.

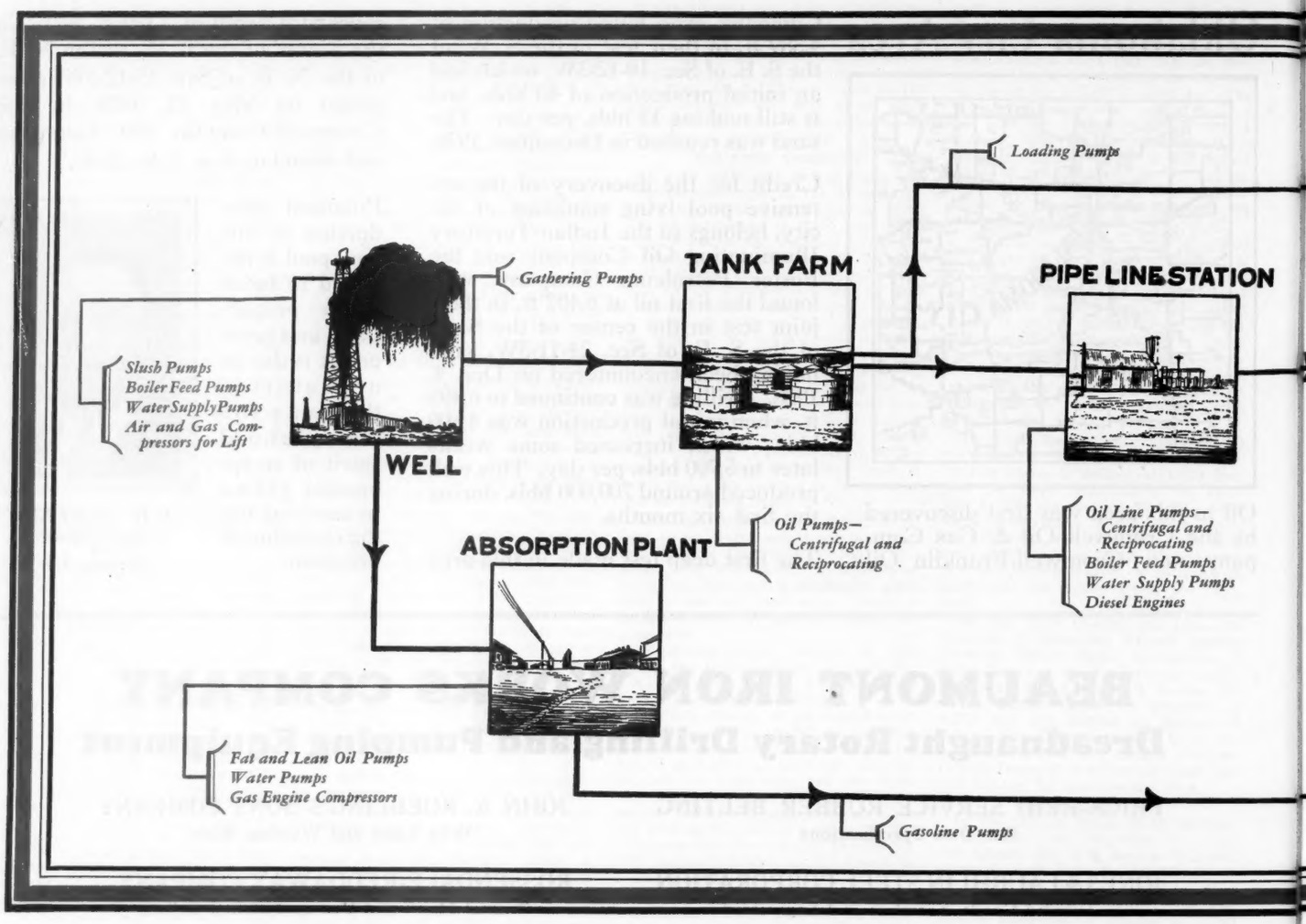
AXELSON MACHINE COMPANY
Sucker Rods, Pull Rods, Working Barrels, etc.

DONOVAN BOILER WORKS
Oil Country Boilers and Tanks

FRICK-REID
SUPPLY CORPORATION

COVERS THE FIELD WITH WELL MANAGED STORES FROM THE ROCKY MOUNTAINS TO THE ATLANTIC COAST

Pittsburgh - - - - - - - Tulsa



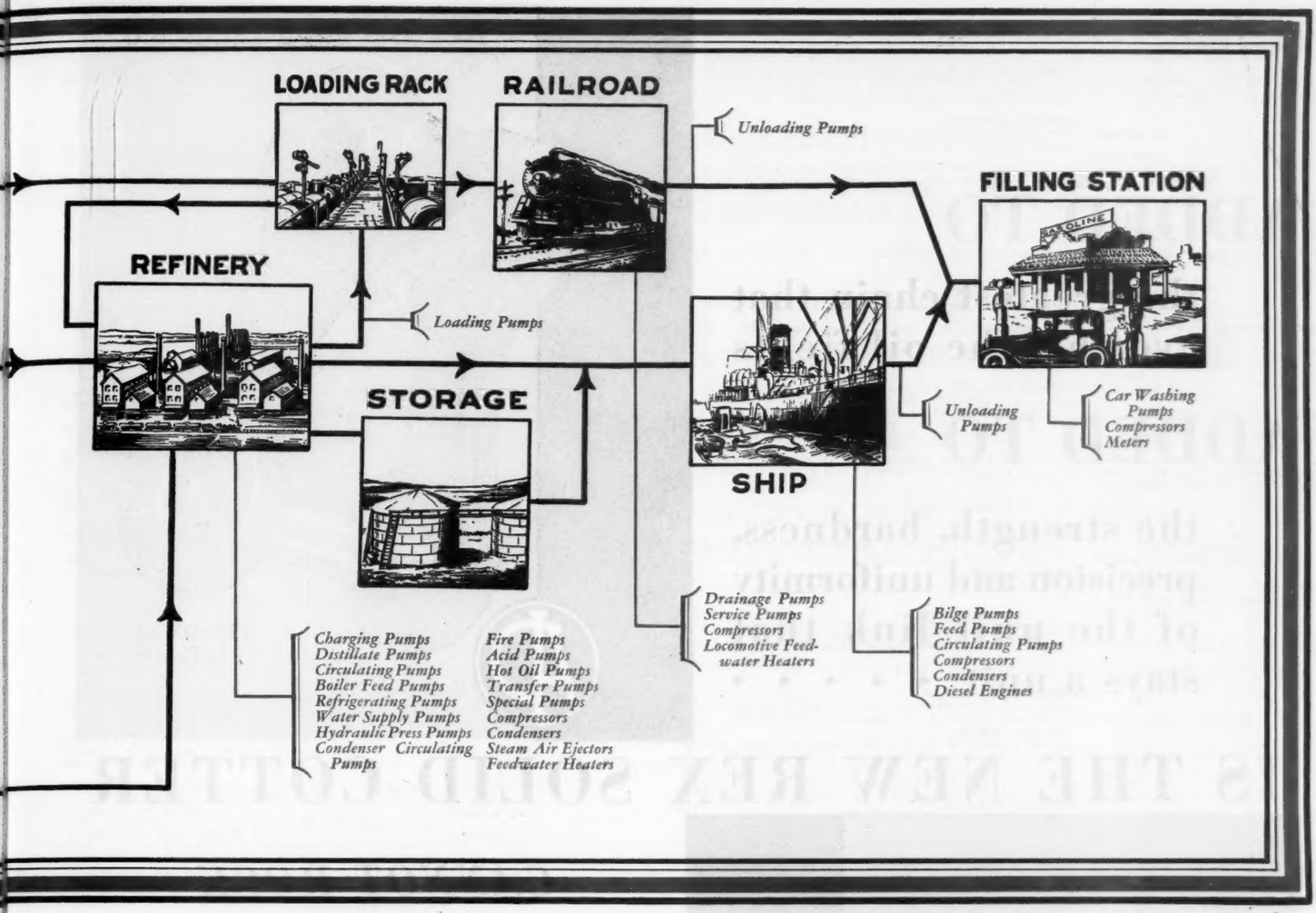
On the Equipment *Identified by this Symbol*

PUMPS
COMPRESSORS
CONDENSERS *and* Auxiliaries
DIESEL ENGINES
GAS ENGINES
FEEDWATER HEATERS
WATER, OIL *and* GASOLINE METERS

Literature on Request

WORTHINGTON

G-19



. . . . *the Petroleum Industry Relies*

SWISH! Swish! Swish! The cars pass in never ending stream. At the filling stations, day and night, the familiar refrains are sung . . . "Five gallons please" or "Fill 'er up."

Worthington equipment has helped in a big way to make this picture possible. Trace the activities pictured on the chart above. At every point you find Worthington products an essential factor . . . in production, in refining, in distribution, in marketing.

No other manufacturer has developed so wide yet intensive, so varied yet specialized, an interest in the Petroleum Industry as Worthington.

And the Industry has responded by accepting and endorsing Worthington products . . . for it has found in those products that dependability and profit-increasing economy for which Worthington is universally known and which is so important in this highly competitive field.

For the solution of *your* pumping and power service problems, Worthington offers a line of time-proven equipment and places at your command an experience of 89 years. You will find Worthington resident engineers at convenient points in the oil fields.

WORTHINGTON PUMP AND MACHINERY CORPORATION

Works: Harrison, N. J. Cincinnati, Ohio Buffalo, N. Y. Holyoke, Mass.

Executive Offices: 2 Park Avenue, New York, N. Y.

GENERAL OFFICES: HARRISON, N. J.

District Sales Offices:

ATLANTA	CHICAGO	DALLAS	EL PASO	LOS ANGELES	PHILADELPHIA	ST. PAUL	SEATTLE
BOSTON	CINCINNATI	DENVER	HOUSTON	NEW ORLEANS	PITTSBURGH	SALT LAKE CITY	TULSA
BUFFALO	CLEVELAND	DETROIT	KANSAS CITY	NEW YORK	ST. LOUIS	SAN FRANCISCO	WASHINGTON

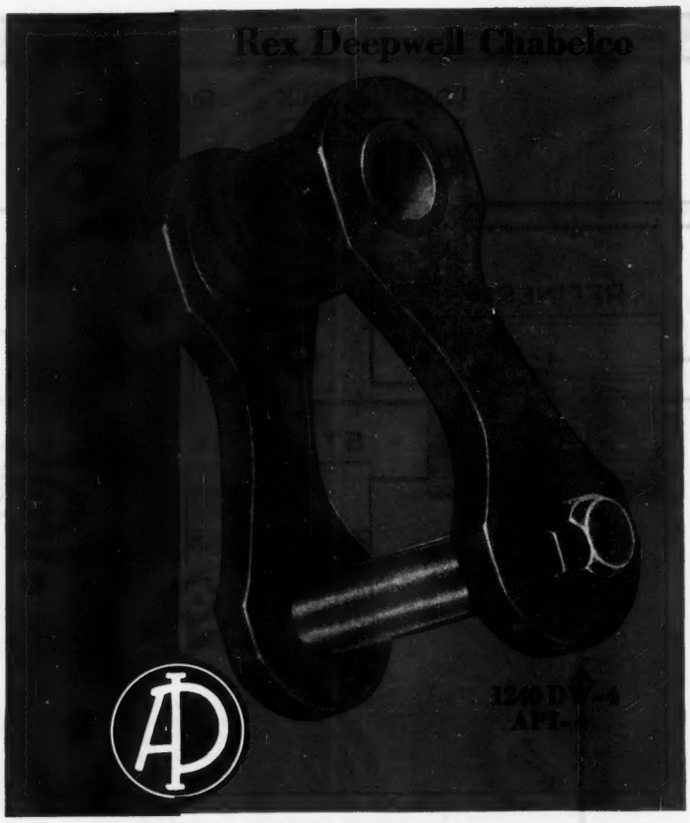
Branch Offices or Representatives in Principal Cities of all Foreign Countries

ADDED TO

the greatest chain that ever hit the oil fields

ADDED TO

the strength, hardness, precision and uniformity of the unit link that stays a unit • • • • •



IS THE NEW REX SOLID COTTER

Showing the Rex Solid Cotter

CANNOT ROCK
CANNOT BREAK
STAYS IN PLACE

still more

—the greatest chain that ever hit the oil fields

1240 DW-4 is an API-4 Chain
1030 DW-3 is an API-3 Chain

CHAIN BELT COMPANY, *719 Park St., Milwaukee, Wis.*
1310 Second National Bank Building, *Houston, Texas*
1414 Santa Fe Avenue, *Los Angeles, California*

REX DEEPWELL CHABELCO
Reg. U. S. Pat. Office

WILDCAT OPERATIONS IN SOUTHWEST TEXAS

(Continued from Page 54)

W. H. Harper's No. 3 Thomas, J. Roberts Sur. ..... T. D. 1,742 ft.; bailed down halfway when clamps gave way and csg. dropped 80 ft.; pulling csg. to reset at 1,468 ft.

Stone et al's No. 2 Robert Guinn, Joseph Burleson Sur., N from Dale ..... Location.

G. R. McIntire's No. 1 J. B. Towns in Isaac Weldon Sur., 4,900 ft. to NE line, 1,350 ft. to SE line of survey ..... Drlg. 2,630 ft. in shale.

DE WITT COUNTY

Gibson & McIntyre's No. 1 Wm. Van Roeder ..... Shut down 1,380 ft.

F. P. Zoch's No. 1 Steinman, John Garelli Sur., 976 ft. from SW line, 1,797 ft. from NW line ..... Location.

H. T. Roe's No. 1 Leinhardt ..... Drlg. 1,450 ft. in shale and boulders.

DIMMITT COUNTY

Texas Oil & Fuel Co.'s No. 1, Laxon Sur., 653.5 ft. W Carrizo Springs ..... T. D. 646 ft.; shut down.

DUVAL COUNTY

Simms Oil Co.'s No. 5 Dinn, Sec. 62, 500 ft. W line, 660 ft. S. line ..... T. D. 1,778 ft.; set 6⅝-in. csg. at 1,739 ft.; sand at 1,748-78 ft.; 35,000,000 ft. gas, 450 lbs. rock pressure.

Trussell & Partee's No. 1 E. R. Hagest, Sur. No. 271, Blk. 7, 450 ft. E line, 150 ft. S line ..... Drlg. 1,500 ft.

National Oil Co.'s No. 2 Ball, Agua Poquita Sur., Blk. 3.. Drlg. 400 ft.

Southern Oil Co.'s No. 1 Welder Ward, Sur. 215 ..... Drlg. 500 ft.

EDWARDS COUNTY

A. M. Griffith's No. 1 Wardlaw ..... Shut down 3,000 ft.

FAYETTE COUNTY

Muldoon Oil & Gas Co.'s No. 1 Kemp, M. Smith League .. Drlg. 1,000 ft.

W. J. Kelly's No. 1 Burke ..... Shut down 1,000 ft.

GOLIAD COUNTY

Compton Oil Co.'s No. 1 Fromme, Dexter Survey ..... Standing.

Humble Oil & Refg. Co.'s No. 1-A Spangle ..... Drlg. 1,037 ft.

F. P. Zoch's No. 1 Kaufman ..... T. D. 3,006 ft.; resumed drlg. after pulling lines.

Mission Drlg. Co.'s No. 3 Ray, 3 miles E of No. 2. T. D. 6,060 ft.; plugged back to 4,036 ft. to retest sand.

Western Union Oil Co.'s No. 1 Lucas, Juan Moya Delgado Sur. ..... Drlg. 800 ft. in pink shale.

GONZALES COUNTY

Acme Oil & Royalty Corp.'s No. 1 Weber, Thomas Wright Survey ..... T. D. 1,390 ft.; showing gas in sand; continuing to drill.

Dunning & Pierce's No. 1 Stahl, Sarah Hendricks Sur., 150 ft. to SE and NE lines of farms ..... Location.

Cranfill & Reynolds' No. 1 F. J. Lang, James Rodney Sur., 150 ft. from N line, 450 ft. from E line ..... T. D. 2,350 ft.; drlg. in sandy shale.

Adams & Lyles' No. 1 Jackson Sur. ..... Shut down 800 ft.

Joe Bruner's No. 1 R. D. and J. C. Miller ..... Resumed drilling at 3,000 ft.

Crown Petroleum Co.'s No. 1 Hattenback ..... T. D. 3,003 ft. in gumbo; abandoned dry.

Finnell & Elam's No. 1 Robinson, Liverpool Sur. ..... Drlg. 1,720 ft.

Hoffman et al's No. 1 Borrer, J. Stewart Sur ..... Drlg. 1,025 ft.

Marshall & Moore's No. 1 St. Clair, R. H. Wymn Sur. .... T. D. 1,700 ft.; to resume drlg. soon.

United North & South Dev. Co.'s No. 1 J. E. Preston 120 acres, John Oetkins Sur., 1,350 ft. to S line, 750 ft. of W line ..... Rigging up.

L. L. Jones' No. 1 J. F. Kindred, W. W. Barnes Sur., 700 ft. W line, 1,000 ft. S line ..... Location.

J. H. Burt et al's No. 1 E. Menking, Blk. 24, 150 ft. to N and 450 ft. to E line of Blk. 24, 14,050 ft. to NW and NE line of Sur. ..... Rigging up.

Linderman Bros.'s No. 1 F. H. Frampton ..... Drlg. 1,800 ft.

A. G. Keiffer's No. 1 B. B. Dix ..... Shut down 2,690 ft.

GUADALUPE COUNTY

H. H. Weinert's No. 1 A. E. Dowdy, J. C. Darst Sur., 110 ft. S line, 36 ft. E line ..... Location.

H. H. Weinert's No. 2 A. E. Dowdy, J. C. Darst Sur., 100 ft. N line, 36 ft. E line ..... Location.

J. O. Dore's No. 1 Appling, H. Cottlebur ..... Completed water well and fired up to start drlg. for oil.

Grayburg Oil Co.'s No. 1 Wells, Jose La Baume ..... T. D. 3,520 ft.; drlg.; topped chalk at 3,395 ft.; is running quite low.

Pagenkopf & Kennon's No. 1 Halm, Joseph Kent Sur., 5 miles E of Seguin ..... Drlg. 1,256 ft.

T. H. Poole et al's No. 1 F. Behring, Green DeWitt Sur. ..... P. B. about 10 ft. and will bail again; T. D. 2,356 ft.

Adams-Lyles-Walton's No. 1 Zoberoski, Jesus Cantu Sur.. Corrected depth 953 ft.; standing.

HAYS COUNTY

E. A. Bucklin's No. 1 A. Elsner ..... Shut down 526 ft.

JACKSON COUNTY

Wright Bros.' No. 7 Drushell ..... Standing 3,875 ft.

JIM HOGG COUNTY

T. J. Conway's No. 2 Palacious, Sur. 232, Blk. 10 ..... Drlg. 400 ft.

Deep Rock Oil Co.'s No. 1 Kelsey ..... Drlg. 2,450 ft.

L. M. Holden's No. 4 Jones, 1,320 ft. to north line, 1,320 ft. to east line of 160 acres out of Share 5 "A" Dregue Hinojosa Grant ..... Set 10-in. casing 42 ft.

R. E. Moore's No. 1 Yaguirre, 150 ft. N & E lines Las Animas Grant ..... T. D. 2,508 ft.; abandoned dry.

JIM WELLS COUNTY

E. W. Ogden's No. 1 G. Farris, M. Perez Sur. ..... T. D. 2,404 ft.; tested small amt. of gas at 2,404 ft.; drlg. 2,404 ft.; will deepen.

KARNES COUNTY

Ruby & Claypool's No. 1 Tom, V. Zepeda Sur., 850 ft. N line, 1,600 ft. E line ..... Drlg. 1,400 ft.

Benedum-Trees' No. 1 S. E. Crews, Britton Odem Sur. .... Shut down 2,685 ft.; tested sulphur water at 2,141-46 ft.

Hurador Oil Co.'s No. 1 W. E. Porter ..... T. D. 2,758 ft.; drlg. in hard sand.

The Texas Company's No. 1 Rhuman ..... Drlg. 800 ft.

KERR COUNTY

L. R. Page and associates' No. 1 Real ..... Shut down 3,671 ft.

O. E. Tunstill et al's No. 1 Love Ranch, 2 miles E of Real County line, 3 miles N of Bandera County line ..... Moving in rig.

KENDALL COUNTY

Borgett et al's No. 1 Haag, W. Avery Sur. ..... Drlg. 600 ft.

KLEBERG COUNTY

Bowen et al's No. 1 King Ranch, 12 miles SW of Kingsville ..... Moving in rig from Refugio.

KINNEY COUNTY

Lloyd Oil Co.'s No. 1 G. B. Moore, Survey 117 ..... T. D. 2,680 ft.; drlg. in shale and shells.

A. Blume's No. 1 School land, Sec. 15 ..... T. D. 3,186 ft.; 300,000 ft. gas from Eagleford; drlg. deeper.

LIVE OAK COUNTY

O'Neil & Catlett No. 1 Smith, 900 ft. SW line, 150 ft. NW line ..... T. D. 448 ft. in shale; set 10-in. csg. 400 ft.

Dr. J. K. Rowan Co.'s No. 1 Lynne Ranch, 171 ft. W of George West ..... Location.

J. P. Lightfoot's No. 1 Lewis ..... Drlg. 2,460 ft.

Simmons Oil Co. No. 1 Richard Coquat in Jas. C. Hill survey 2,250 ft. to S. line 1,750 ft. to E. line. 7 miles NE of Oakville ..... Rigging up.

MAVERICK COUNTY

Ryan Consolidated Petroleum Co.'s No. 2 Indio Ranch .. Total depth 5,661 ft.; abandoned dry.

Rycade Oil Corp.'s No. 4 J. M. Chittim ..... T. D. 5,560 ft.; setting csg.

Rycade Oil Corp.'s No. 4 Sullivan ..... Drlg. 5,770 ft.; 2,000,000 ft gas.

Rycade Oil Corp.'s No. 5 Chittim ..... Drlg. 1,500 ft.; ready to resume.

Rycade Oil Corp.'s No. 3 Chittim ..... T. D. 5,791 ft.; drlg.

Rycade Oil Co.'s No. 3 Chittim, Blk. 7, Sur. 116, L&G.N. 175 ft. N of No. 1, 10 ft. W, 255 ft. S line ..... T. D. 791 ft.; drlg.

The Texas Company, 5 miles west Darling Switch ..... T. D. 3,850 ft. in brown lime; to set csg.

MEDINA COUNTY

Pan American Petroleum Co.'s No. 1 Harrison, Sur. 799 .. Rigging up.

Pat Armstrong's No. 1 C. W. Butts in George C. Hanson Sur. ..... Drlg. 320 ft.

Peters et al's No. 1 Noonan, J. N. Alsbury Sur. ..... Shut down 1,325 ft.

Cecil Switzer's No. 1 Zen, 6 miles west of Hondo ..... Fishing 3,487 ft.

R. C. Hill's No. 1 A. Wuezbach, G. Areola Sur., 500 ft. E line, 600 ft. S line ..... Location.

California-Medina's No. 1 Rothe ..... T. D. 3,550 ft.; approx. depth; abandoned; hole was shot which finished it.

A. W. Skogland's No. 1 Saathoff, A. Smelzer No. 19 Sur.. T. D. 910 ft.; taken over by Carl Bros. from A. W. Skogland; shut down.

MILAM COUNTY

Service Oil & Gas Co.'s No. 1 Muldrow, L. Taylor Sur., SE cor. ..... Location.

E. L. Chapman's No. 2 Johnson, J. J. Acosta Sur. ..... 2,100 ft. hot sulphur water in Edwards.

I. P. Sessions' No. 7 J. Bauer, T. J. Chambers Sur. .... Location.

E. L. Chapman's No. 1 Johnson, J. J. Acosta Sur. ..... T. D. 2,200 ft.; dry and abandoned.

E. L. Chapman's No. 1 Holman in J. J. Liendo Survey.... Drlg. 2,015 ft.

Michalk & Clark's No. 1 J. M. Gilchrist, J. J. Acosta Sur., 500 ft. to S line, 150 ft. to W line of farm .... T. D. 1,150 ft.; drlg. in Taylor marl.

Noack-McCarmack's No. 1 D. D. Fowler ..... T. D. 1,883 ft.; fishing for tools.

Diggs and others' No. 1 Nolen ..... Derrick.

Hill & Bonwell's No. 1 B. Booker, James Welch Sur. .... Fishing 2,020 ft.

Lloyd Oil Corp.'s No. 1 Camp, D. Robinson Sur. ..... Sulphur water in Edwards lime at about 2,100 ft.; abandoned dry.

Lloyd Oil Corp.'s No. 1 San Clement, Fokes Sur. ..... Spudded in.

A. H. Wray's No. 1 D. D. Fowler ..... Drlg. 964 ft.

McMULLEN COUNTY

Sun Oil Co.'s No. 1 Berry, J. Poitenent Sur. No. 9 ..... T. D. 100 ft.; spudded in.

Cowboys Oil Co.'s No. 1 Shiner, H. M. Brewer Sur. ..... Testing gas sand, 2,269 ft.

NUECES COUNTY

Nueces River Basin Dev. Co.'s No. 1 F. C. Allen ..... T. D. 3,940 ft.; cored 3 ft. in sand with odor of oil; reamed down from 2,700 ft.

H. Grimm et al's No. 1 A. R. Roberts, Blk. 79, Winter Vegt. Garden Subdivision, 6 miles NW of Robstown, 12 miles NE Agua Dulce Field ..... T. D. 775 ft.; drlg. in tough gumbo.

Trinity Drillers and Sun Co.'s No. 1 Tompkins ..... T. D. 3,205 ft.; W. O. fuel oil; depth corrected.

SAN PATRICIO COUNTY

LaFeria Oil & Gas Co.'s No. 1 C. C. Smith in J. C. White Survey, 690 ft. to north line, 350 ft. to east line .... Drlg. 1,200 ft. in shale.

STARR COUNTY

The Texas Company's No. 4-A V. G. Guerra, Porcion 67, Share 305-D ..... Drlg. 3,405 ft.

Smith & Adams' No. 1 Welch, Pedernal Sur. ..... Drlg. 600 ft.

Ohio Oil Co.'s No. 1 Bass, Porcion 76, Blk. 71 ..... Drilling.

Milam Drlg. Co.'s No. 5 R. Allen, Blk. 147 ..... Location.

UVALDE COUNTY

Waldrop & Welch's No. 1 H. S. Benson, 2 miles northwest of Uvalde ..... T. D. 428 ft.; drlg. in lime.

Phantom Oil Co.'s No. 1 Claudt, Sur. 661 ..... Moving in machinery.

WEBB COUNTY

L. W. Nelson's No. 2 Moglio, SE NW Sur. 675 ..... T. D. 2,655 ft.; cored salt water sand from 2,650-55 ft.

WILLIAMSON COUNTY

M. L. Vaughan's No. 1 Logan D. Wright Sur., 300 ft. E line, 500 ft. S line ..... Location.

Ray Oil Co.'s No. 1 W. J. Fouse, W. Donoho Sur. ..... 156 ft.; waiting on heavier rig.

W. J. Harlan's No. 1 J. V. Stile, J. Bevil Sur., 600 ft. N line, 900 ft. E line ..... Location.

F. M. Moss et al's No. 1 Kreuger, W. Cartwright Sur., SW cor. ..... Location.

WILSON COUNTY

R. M. Sherer's No. 1 Tummilson, A. Trevena Sur. ..... Drlg. 457 ft.

Tidal Oil Co.'s No. 1 Felix Kulesza, Susanna Larrison Sur., 225 ft. to E line, 1,320 ft. to S line of 647-acre tract ..... Derrick up; drlg. water well.

Rycade Oil Corp. et al's No. 1 George Hice, Juan Delgado Sur., 650 ft. W of Cibolo River, 150 ft. SE line of tract ..... Location.

Grayburg Oil Co.'s No. 1 Tigler, Parrot Sur. ..... T. D. 3,396 ft.; temp. shut down.

R. M. Sherer's No. 1 First State Bank of Stockdale, Moran Sur. ..... Drlg. 220 ft.

ZAPATA COUNTY

R. F. Blankenship's No. 1 G. T. Montemeyer, Sur. 45, Blk. 7, 150 ft. N & E lines ..... Drlg. 1,000 ft.

Magnolia Pet. Co.'s No. 2 F. G. Martinez Sur. No. 6, 660 ft. to N line, 660 ft. to E line ..... Location.

John Pappas' No. 2 Cuellar, Por. 33 and 34 ..... Drlg. 1,450 ft.

Hill et al's No. 1 A. O. de Vela, Blk. 30, El Grullo Sur. ..... T. D. 1,052 ft.; preparing to run csg.

National Oil Co.'s No. 1 D. B. Adams ..... Standing 690 ft.

Marts & Beavens' No. 1 Trevino, Blk. 2, Porcions 2 and 3, Sur. 1, 150 ft. SE line and SW line ..... Drlg. 1,928 ft.

ZAVALA COUNTY

Tritex Oil Co.'s No. 1 Clay Burns ..... T. D. 780 ft.; standing.

Chicago Merchants Produce Co.'s No. 1 fee, 1 mile E of La Pryor ..... Drlg. 1,000 ft.

Tritex Oil Co.'s No. 4 West ..... Lost tools in hole 795 ft.

Tritex Oil Co.'s No. 1 Childress ..... Dry and abandoned 1,200 ft.

Capt. Alvin Anglin and George E. Smith's No. 1 Johnnie Davidson, 5 miles SW of Batesville ..... Dry and abandoned 1,740 ft.

Tritex Oil Co.'s No. 2 Childress, one-fourth mile NW of old Dominion Co.'s No. 1 Pryor ..... Drlg. 650 ft.

LOUISIANA-ARKANSAS PROVEN AREAS

(Continued from Page 57)

The Texas Co.'s No. 72 Levee Board, 725 ft. N, 310 ft. E, SW cor. SE, Sec. 27-21-16 ..... Rigging up.

J. C. Tippett's No. 1 Levee Board, 1,120 ft. W, 200 ft. N, SE cor. SW, Sec. 26-21-16 ..... 12 ft. of broken sand 1,860 ft.

CADDO PARISH—LEWIS

Snake Creek Oil Co.'s No. 1 Levee Board, SW NW, Sec. 9-21-16 ..... S.W.; abd. 2,328 ft.

CLAIBORNE PARISH HOMER

Oakes et als' No. 1 Richardson, NE SE, Sec. 19-21-7 .... Drlg. shale and boulders 1,250 ft.

PINE ISLAND

E. W. McGoldrick's No. 1 Dreyfuss-Lane, 515 ft. N, 300 ft. E, SW cor. NE, Sec. 15-21-15 ..... Derrick.

Simplex Oil Co.'s No. 7 Hunsicker, 670 ft. W, 400 ft. S, NE cor. SE, Sec. 15-20-15 ..... Set 6-in. 2,170 ft.

LASALLE PARISH—URANIA

Air Lift Oil Co.'s No. 3-A Hardtner, Sec. 7-10-2e (no check) ..... Drlg. 1,200 ft.

Ark. Fuel Co.'s No. 5 Urania, 200 ft. S, 200 ft. E, NW cor. NE SE, Sec. 24-10-1e ..... Began drlg. Nov. 3.

Kinney, Hardtner & Randall's No. 1 Kinney, SW SW, Sec. 7-10-2e ..... S.D. 1,570 ft.
Philp et als' No. 1 Urania, SE cor. NE NE, Sec. 1-10-1e.. Tested 500,000 ft. gas and sanded up; C.O.; setting liner to test; T.D. 730 ft.
Randall et als' No. 3 Urania, Sec. 1-10-1e ..... S.D. 675 ft.
Trio Oil Co.'s No. 2 Urania, NE cor. SW SW NW, Sec. 19-10-1e ..... Rigging up.

MOREHOUSE PARISH

Bahan & Bahan's No. 1 Feazel, 330 ft. S, 280 ft. W, NE cor., Sec. 3-20-4 ..... Cmtng. 6-in. 2,103 ft.
J. S. Herkness' No. 11 Bowles, 4,620 ft. S, 1,980 ft. E, NW cor. Sec. 18-20-5 ..... Drlg. 2,130 ft.
J. S. Herkness' No. 12 Bowles, 3,392 ft. E, 3,300 ft. S, NW cor. Sec. 18-20-5 ..... Location.
Magnolia Pet. Co.'s No. 5 U. S., 630 ft. N, 330 ft. W, SE cor. NE SW, Sec. 29-21-5 ..... Completed Nov. 2; gauged 7,000,000 ft. gas 2,363 ft.
Southern Carbon Co.'s No. 12 Tensas, 660, ft. S, 660 ft. E, NW cor., Sec. 2-20-4 ..... Drlg. 2,112 ft.
Southern Carbon Co.'s No. 13 Tensas, 660 ft. S, 1,320 ft. W, NE cor. Sec. 4-20-4 ..... Derrick.
Trousdale & Wright's No. 2 Kate Cole, 240 ft. W, 1,311 ft. S of point where N line of Sec. 42 joins dividing line of Secs. 8 and 9 in Sec. 42-18-4 ..... Derrick.
United Carbon Co.'s No. 2 Patton, 660 ft. N, 660 ft. E, SW cor. SE, Sec. 2-20-4 ..... Location.
United Carbon Co.'s No. 3 Patton, 660 ft. W, 660 ft. S, NE cor. SE, Sec. 2-20-4 ..... Location.

OUACHITA PARISH

Amalgamated Carbon Co.'s No. 2 Cole, 742 ft. E, 703 ft. S, NW cor., Sec. 43-19-4 ..... Rigging up.
Amalgamated Carbon Co.'s No. 3 Cole, 1,616 ft. E, 721 ft. S, NW cor., Sec. 42-19-4 ..... Drlg. 2,034 ft.
Austin & Jordan's No. 1 Albright, 1,597 ft. E, 744 ft. N, common cor. Secs. 10, 9 and 13 in Sec. 13-18-3 ..... Location.
Austin & Jordan's No. 2 McGuire, 2,561 ft. E, 844 ft. N, SW cor., Sec. 62-18-3 ..... Cmtd. 6-in. 2,225 ft.
Chauvin Gas Co.'s No. 1 Slagle Johnson, 645 ft. S, 567 ft. W, NE cor., Sec. 49-18-4 ..... Cmtd. 6-in. 2,139 ft.
Chauvin Gas Co.'s No. 2 Slagle Johnson, 3,498 ft. S, 26 ft. E, NW cor. Sec. 49-18-4 ..... Began drlg. Nov. 3; set 12-in. at 158 ft; T.D.
Chauvin Gas Co.'s No. 3 Slagle Johnson, 2,539 ft. S, 55 ft. E, NW cor. Sec. 47-18-4 ..... Location.
Chauvin Gas Co.'s No. 4 Slagle Johnson, 4,505 ft. S, 257 ft. E, NW cor. Sec. 47-18-4 ..... Location.
Chauvin Gas Co.'s No. 2 W. Va., 186 ft. N, 67 ft. W, NW cor., Sec. 42, in Sec. 8 ..... Location.
Chauvin Gas Co.'s No. 3 W. Va., 1,980 ft. S and W, NE cor., Sec. 8-18-4 ..... Location.
Chauvin Gas Co.'s No. 4 W. Va., 1,078 ft. N, 294 ft. W, NE cor., Sec. 49, in Sec. 7 ..... Location.
Chauvin Gas Co.'s No. 5 W. Va., 2,046 ft. S, 1,790 ft. W, NE cor. SE, Sec. 6-18-4 ..... Location.
Greenwood Prod. Co.'s No. 2 Phillips, 660 ft. N, 198 ft. W, SE cor., Sec. 18-19-4 ..... Completed Nov. 2; 3,000,000 ft. gas 2,184 ft.
Hope Producing Co.'s No. 1 Fairbanks, 660 ft. N, 624 ft. E, SW cor. SE, Sec. 25-20-4 ..... Cmtd. 6-in. 2,130 ft.
Hope Producing Co.'s No. 2 Fairbanks, 1,876 ft. E, 628 ft. N, SW cor. SE, Sec. 25-20-4 ..... Location.
Hope Producing Co.'s No. 3 Fairbanks, 1,876 ft. E, 628 ft. S, NW cor. NE, Sec. 36-20-4 ..... Location.
G. E. Jordan's No. 1 Anding, NW NE, Sec. 18-18-5 ..... Plugged back to 2,234 ft; T.D. 2,480 ft.
Jordan Drlg. Co.'s No. 5 Cole, 680 ft. S, 602 ft. W, common cor. Secs. 1, 2 and 35, in Sec. 35-18-3 ..... Cmtd. 6-in. 2,143 ft.
Mack & Pipes' No. 2 Slagle-Johnson, 446 ft. S, 649 ft. W, northwesterly cor., Sec. 47, in Sec. 43-19-4 ..... Location.
Mack & Pipes' No. 2 Johnson, Sec. 43-18-4 ..... Location.
Mack & Pipes' No. 1 Burke est., 654 ft. N, 497 ft. E, SW cor., Sec. 6-18-5 ..... Location.
Magnolia Pet. Co.'s No. 2 fee 401, 660 ft. S, 660 ft. E, NW cor., Sec. 2-18-3 ..... Derrick.
Magnolia Pet. Co.'s No. 4 U. S., Sec. 20-19-5; reported completed July 31, in error ..... Tested 1,000,000 ft. gas at 515 lbs. rock pressure; set liner 2,528 ft; bailed dry; plugged back to 2,200 ft; estimated 500,000 ft. gas; W.O; waiting orders 2,528 ft.
New Process Carbon Co.'s No. 2 Cole, 1,971 ft. E, 1,820 ft. N, SW cor. Sec. 35-20-4 ..... Began drlg. Oct. 24; cmtd. 12-in. 187 ft.; drlg. 1,820 ft.
Palmer Corp.'s No. 1 Cagle, 1,944 ft. S, 476 ft. E, NW cor., Sec. 7-18-5 ..... Cmtd. 6-in. 2,167 ft.
J. E. Sandridge, Jr.'s No. 1 W. E. Montgomery, 568 ft. N, 410 ft. E, SW cor., Sec. 18-18-5 ..... Completed Oct. 31; gauged 13,000,000 ft. gas 855 lbs. pressure; T.D. 2,233 ft.
Son Car Co.'s No. 14 Hank, Sec. 43-20-4 ..... Location.
Southern Carbon Co.'s No. 54 fee, 660 ft. N, 674 ft. W, SE cor. NE, Sec. 13-19-4 ..... Shut down 2,621 ft.
Southern Carbon Co.'s No. 4 Phillips, 660 ft. S, 660 ft. E, NW cor., Sec. 8-19-4 ..... Rigging up.
Stubbs, trustee's No. 1 Linton Stubbs, 203 ft. E, 121 ft. S, Sec. 19-19-4 ..... Arranging test 2,130 ft.
Trousdale & Wright's No. 1 Kate Cole, 296 ft. S, 47 ft. W, common cor. Secs. 8, 9 and 42 in Sec. 42-18-4 .... Cmtd. 6-in. 2,126 ft.; drlg. in 2,139 ft.
Trousdale & Wright's No. 2 Kate Cole, Sec. 42-18-4e .... Location.
United Oil & Nat. Gas Products Co. of La.'s No. 5 Guthrie, 6,896 ft. N, 6,022 ft. W, cor. Secs. 49, 36, and 25, Sec. 49-20-5 ..... Derrick.
United Oil & Nat. Gas Products Co. of La.'s No. 2 Cole, 660 ft. S, 594 ft. E, C, Sec. 26-20-4 ..... Derrick.
United Oil & N. G. Products Co.'s No. 1 Spade, 660 ft. N, 660 ft. W, SE cor. NE, Sec. 35-19-3 ..... Location.
United Carbon Co.'s No. 5 Spades, Sec. 35-19-3e ..... Location.
W. Va. Lumber Co.'s No. 1 Bullock, Sec. 25-18-5 ..... Drlg. 1,890 ft.

RED RIVER PARISH

Joe Danciger et als' No. 1 Pickett, 6,621 ft. S, 2,623 ft. W, NE cor., Sec. 15-13-11, in Sec. 23-13-11 ..... C.O. 2,400 ft; T.D. 2,555 ft.
Root Refineries, Inc.'s No. 1 Home State & Savings Bank, 330 ft. N, 330 ft. W, C, Sec. 8-13-10 ..... Oil show 2,570 ft; drill stem test; S.W; cored sand showing gas 2,598 ft; S.D. 2,667 ft.
Triple Oil Co.'s No. 1 W. M. Pollock, Sec. 33-13-11 ..... Cmtd. 6⅝-in. 2,456 ft.; W.O.S.R. 2,470 ft.

RICHLAND PARISH

Ark.-La. P. L. Co.'s No 1 Chenault, 1,980 ft. W, NW, C, SE SE, Sec. 2-16-6 ..... Cmtng. 9-in. 2,320 ft.
W. C. Feazel's No. 2 Brown, 1,940 ft. W, 185 ft. N, SE cor. Sec. 22-16-6 ..... S.D. 2,349 ft.
W. C. Feazell's No. 1 R. B. Simon, 2,406 ft. W, 2,020 ft. S, NE cor. Sec. 11-16-6 ..... Location.
W. C. Feazell's No. 1 E. L. Wilson, 647 ft. N, 241 ft. E SW cor. NW, Sec. 31-16-6 ..... Rigging up.
Hope Prod. Co.'s No. 1 J. H. Hemler, 660 ft. S, 660 ft. W, NE cor., Sec. 11-16-6 ..... Drlg. 2,357 ft.
Hope Prod. Co.'s No. 1 L. R. Hemler, 600 ft. S, 495 ft. W, NE cor., Sec. 22-16-6 ..... Cmtng. 6-in. 2,300 ft.
Hope Prod. Co.'s No. 1 Thomason, 3,366 ft. W, 660 ft. S, NE cor., Sec. 11-16-6 ..... Cmtd. 6-in. 2,281 ft.
Industrial Gas Co.'s No. 1 Boughton, N 85 degrees, 10 min. W, 4,458 ft., 865 ft. S, NE cor. Sec. 1-16-6.... Began drlg. Nov. 1; cmtng. 12½-in. 126 ft; T.D. 455 ft.
Industrial Gas Co.'s No. 1-A J. H. Hemler, 1,431 ft. E, 660 ft. S, NW cor. Sec. 12-16-6 ..... Cmtng. 9-in. 886 ft.
Industrial Gas Co.'s No. 1 J. R. Hodge, 3,259 ft. E, 1,320 ft. S, center Sec. 7-16-7 ..... Began Nov. 4; 50 ft.
Industrial Gas Co.'s No. 1 Rayville State Bank, 660 ft. N, 660 ft. E, center Sec. 12-16-6 ..... Oct. 30; set 180 ft. 12½-in. at 600 ft; T.D.
Industrial Gas Co.'s No. 1-C Sartor, 536 ft. N, 1,333 ft. E, SW cor. NW, Sec. 21-16-6 ..... Began drlg. Oct. 26; cmtd. 12½-in. 154 ft.
International Gas Products Co.'s No. 1 Boughton, Sec. 33-16-6 ..... Oct. 30; set 201 ft. 8-in. at 889 ft; T.D.
Magnolia Pet. Co.'s No. 2 Hatch, 180 ft. N, 660 ft. W, SE cor. NE SE, Sec. 2-15-5 ..... Test. S.W. 3,042 ft; drlg. 3,085 ft.
Magnolia Pet. Co.'s No. 4 C. M. Noble, 400 ft. S, 660 ft. W, NE cor. SE NE, Sec. 35-16-5 ..... Location.
Magnolia Pet. Co.'s No. 5 C. M. Noble, 600 ft. S, 600 ft. W, NE cor. NW, Sec. 36-16-5 ..... Drlg. 1,949 ft.
M. L. Meredith's No. 1 Holdness, 1,980 ft. S, 990 ft. W, NE cor., Sec. 15-16-6 ..... Rigging up.
Northern La. Nat. Gas Co.'s No. 4 Boykin, Sec. 20-17-1e.. Killing cratered No. 1 Boykin; T. D. 2,398 ft.
Northern La. Nat. Gas Co.'s No. 1-A Colvin, 1,320 ft. E 370 ft. S, center Sec. 34-17-6 ..... Cmtd. 9-in. 912 ft.
Northern La. Natural Gas Co.'s No. 1 Pipes, 2,433 ft. S, 581 ft. E, center Sec. 34-17-6 ..... Set 9-in. 915 ft. Oct. 30.
Northern La. Nat. Gas Co.'s No. 1 A. Purvis, 1,282 ft. S, 183 ft. E, center Sec. 34-17-6 ..... Set 915 ft; 9-in. Oct. 30.
Northern La. Nat. Gas Co.'s No. 1 C. M. Purvis, 1,821 ft. E, 630 ft. S, NW cor. SE NW, Sec. 3-16-6 ..... Set. 12½-in. 164 ft. Oct. 31.
Palmer Corp.'s No. 2 Earle, 1,980 ft. N, 1,320 ft. W, SE cor., Sec. 31-17-6 ..... Set 9-in. 858 ft.
Palmer Corp.'s No. 1 Eubanks, 1,100 ft. N, 350 ft. E, SW cor. SE NW, Sec. 26-17-6 ..... In sandy lime 2,486 ft.
Palmer Corp.'s No. 4 Rhymes, 660 ft. S, 1,320 ft. W, NE cor. NW, Sec. 28-17-6 ..... Plugged back to 2,450 ft; T.D. 3,127 ft.
Southern Carbon Co.'s No. 1 S. R. Humble, 600 ft. N, 600 ft. W, SE cor., Sec. 26-16-6 ..... Drlg. 256 ft.
United Carbon Co.'s No. 1 Roberts, 1,650 ft. N, 600 ft. W, SE cor., Sec. 21-16-6 ..... Began drlg. Nov. 4; at 125 ft.

SABINE PARISH—PLEASANT HILL

Bridges-Clark Oil Co.'s No. 2 Williams, 2,150 ft. W, 2,000 ft. S, NE cor., Sec. 33-10-12 ..... Completed Oct. 31; 487 bbls. at 3,224 ft.
Magnolia Pet. Co.'s No. 4 E. E. Hall, 855 ft. N, 343 ft. W, SE cor. NW SW, Sec. 33-10-12 ..... Cmtd. 8⅛-in. 3,141 ft.
Reid Clark and others' No. 2 Moore, 1,600 ft. N, 330 ft. W, SE cor. Sec. 32-10-12 ..... Derrick; No. 1 drilled by Seip and others.

UNION PARISH

Bahan & Bahan's No. 1 Bess, 47 ft. S, 64 ft. W, NE cor. NW, Sec. 11-20-3 ..... S.D. 130 ft.
Bahan & Bahan's No. 2 Parks, 370 ft. E, 385 ft. S, NW cor. NE SE, Sec. 2-20-3 ..... Abd.; blowout 1,525 ft.
J. R. Bahan's No. 1 Fee, 876 ft. W, 145 ft. S, NE cor. NW, Sec. 11-20-3 ..... Location.
E. S. Hall's No. 2 Spencer, 317 ft. W, 182 ft. S, NE cor. NW SE, Sec. 2-20-3 ..... Drlg. 1,707 ft.
Interstate Nat. Gas Co.'s No. 23 fee, 660 ft. S, 660 ft. E, NW cor. Sec. 33-20-3 ..... Drlg. 1,820 ft.
Lyons Gas Co.'s No. 1 A. B. Edwards, 722 ft. W, 897 ft. S, NE cor. NW, Sec. 11-20-3 ..... Derrick.
Lyons Gas Co.'s No. 1 H. M. Jones, 687 ft. W, 93 ft. S, NE cor. NW, Sec. 11-20-3 ..... Drlg. 1,500 ft; set 8-in. 864 ft.

WEBSTER PARISH—COTTON VALLEY

Magnolia Pet. Co.'s No. 1 McCook & Hibbler, C SW SW, Sec. 22-21-10 ..... Washing out hole at 4,400 ft; T.D. 6,958 ft.
Ohio Oil Co.'s No. 45 Bodcaw, 660 ft. N, 600 ft. W, SE cor. SW SW, Sec. 21-21-10 ..... Cmtd. 6-in. 4,251 ft.
Ohio Oil Co.'s No. 46 Bodcaw, 660 ft. N, 660 ft. E, SW cor. SW NW, Sec. 28-21-10 ..... Derrick.
Palmer Corp.'s No. 2 Miller, 520 ft. N, 504 ft. E, SW cor. SW, Sec. 28-21-10 ..... Drlg. 2,220 ft.
Standard Oil Co.'s No. 3-D Bodcaw, 660 ft. N, 660 ft. E, SW cor. SE NE, Sec. 33-21-10 ..... Arranging to set liner 4,700 ft.
Standard Oil Co.'s No. 1-E Bodcaw, 660 ft. N, 660 ft. E, SW cor. SE, Sec. 28-21-10 ..... Location.
Standard Oil Co.'s No. 1 Thos. Crichton and others, 660 ft. S, 660 ft. W, NE cor. NW, Sec. 22-21-10 ..... 12½-in. csg. 494 ft.

WEBSTER PARISH—SAREPTA AND SHONGALOO

J. W. Clark, trustee's No. 1 L. H. Wise, 1,980 ft. E, 660 ft. S, NW cor., Sec. 30-23-9 ..... W.O.S.R; 6 ft. sand; T.D. 2,754 ft.
Pat Hudson's No. 1 L. S. Gardner, 150 ft. E, 200 ft. S, NW cor. SW NE, Sec. 1-22-11 ..... Cmtd. 6-in. 2,734 ft; bailed csg. dry.
Pat Hudson's No. 22 S. Gardner, 300 ft. N, 300 ft. E, center Sec. 1-22-11 ..... Drilling.
Pat Hudson's No. 1 B. L. Slack, 330 ft. W, 330 ft. N, SE cor. SW, Sec. 36-23-11 ..... Location.
F. E. Estes' No. 2 Pardee, 1,270 ft. W, 50 ft. S, NE cor. NW, Sec. 3-22-11 ..... Cmtd. 10-in. csg. 300 ft; drlg. 1,141 ft.
Magnolia Pet. Co.'s No. 1 C. O. Bailey, 100 ft. N, 660 ft. E, SW cor. NW NE, Sec. 29-23-9 ..... S.D. 2,761 ft.
Magnolia Pet. Co.'s No. 1 N. T. Knight, 330 ft. S, 330 ft. E, NW cor. SE SE, Sec. 33-22-9 ..... W.O.S.R. 2,692 ft.
Magnolia Pet. Co.'s No. 2 Scroggins, 330 ft. S, 376 ft. E, NW cor. SW NW, Sec. 1-22-11 ..... W.O.S.R. 2,708 ft.
Sarepta Oil Co.'s No. 1 L. S. Gardner, 300 ft. S, 300 ft. W, C, Sec. 1-22-11 ..... Waiting on 6-in. to set at 2,681 ft.
Woodmansee et als' No. 1 Boyd, 200 ft. S, 200 ft. E, NW cor. SE SW, Sec. 3-22-11 ..... Abandoned.

ARKANSAS

NEVADA COUNTY

C F. Steele's No. 1 E. W. Groves, Sec. 21-14-20 ..... S.D. for wtr; T.D. 2,821 ft.

OUACHITA COUNTY—SMACKOVER

Ark. Nat Gas Corp.'s No. 2 Avera, 330 ft. S, 330 ft. E, NW cor. SE SW, Sec. 35-15-15 ..... Cmtd. 10-in. 101 ft.; 6⅝-in. 1,984 ft.; T.D. 1,997 ft.
L. H. Hamilton's No. 1 Arnold & Doyle, SE SE, Sec. 23-15-16 ..... Standing 400 ft. in fluid; 23 ft. broken sand; T.D. 2,010 ft.
Marine Oil Co.'s No. 7-A Hays, Sec. 4-16-15 ..... W.O.S.R. 450 ft. oil, 20 ft. sand; T.D. 2,362 ft
Oil Field Corp.'s No. 10 McKenzie, 265 ft. E, 185 ft. N, SW cor, SE NE, Sec. 36-15-16 ..... Cmtd. 6-in. 1,947 ft.
Phillips Pet. Co.'s No. 3 Clayton, NE cor. NW NE, Sec. 34-15-15 ..... W.O.S.R. 350 ft.; fluid in hole 37 ft. broken sand; T.D. 2,036 ft.
Simms Oil Co.'s No. 4 Johnson, 330 ft. N, 85 ft. E, SW cor. NE SE, Sec. 34-15-15 ..... Bailing to test 26 ft. broken sand; T.D. 1,975 ft.
Simms Oil Co.'s No. 5 Johnson, 301 ft. N, 250 ft. W, SE cor. NE SE, Sec. 34-15-15 ..... Rig up.
Skelly Oil Co.'s No. 2 Langley, 250 ft. N, 250 ft. W, SE cor. NW SW, Sec. 35-15-18 ..... Began drlg. Oct. 23; cmtd. 10-in. 66 ft.; drlg 1,600 ft.
Southern Prod. Co.'s No. 1-A Watts, SW cor. SW SE, Sec. 27-15-15 ..... Cmtd. 6⅝-in. 2,029 ft.; T.D. 2,034 ft.
Standard Oil Co.'s No. 13 Arnold, 200 ft. S, 200 ft. E, NW cor. NE NE, Sec. 26-15-16 ..... Location.
Standard Oil Co.'s No. 8 Powell, 200 ft. S, 200 ft. W, NE cor. SE NW, Sec. 34-15-15 ..... Cmtd. 6⅝-in. 1,959 ft; cmtd. 278 ft. of 4½-in. 1,978 ft; T.D. 2,017 ft.
Standard Oil Co.'s No. 9 Powell, Sec. 34-15-15 ..... Began drlg. Oct. 27; cmtd. 10-in. 84 ft.

KEYSTONE
Rust-Resisting
COPPER STEEL
SHEETS

KEYSTONE COPPER STEEL — AMERICAN SHEET AND TIN PLATE COMPANY — PITTSBURGH

Keystone is the *original* Copper Steel. It gives maximum *rust-resistance* and lasting service for all uses above or below the ground. Demand this alloy

For Tanks, Barrels and Drums

Roofing and Siding

Field Construction and All Oil Country Uses

By using KEYSTONE Copper Steel you build for the future. Where rust and corrosion destroy, KEYSTONE (steel alloyed with copper) affords greatest protection. Tests by leading metallurgists prove this. Insist upon sheets with brand shown above. We are also leading manufacturers of Tin and Terne Plates.

AMERICAN

STEEL SHEETS *for* Every Purpose

For information write nearest District Sales Office: Chicago, Cincinnati, Denver, Detroit, New Orleans, New York, Philadelphia, Pittsburgh and St. Louis. Send for a copy of our ANTI-CORROSIVE METAL booklet.

American Sheet and Tin Plate Company

General Offices: Frick Building, PITTSBURGH, PA.

SUBSIDIARY OF

UNITED STATES STEEL CORPORATION

Quality Products — *Dependable Service*

PRINCIPAL SUBSIDIARY MANUFACTURING COMPANIES:

AMERICAN BRIDGE COMPANY
AMERICAN SHEET AND TIN PLATE COMPANY
AMERICAN STEEL AND WIRE COMPANY
CARNEGIE STEEL COMPANY
CYCLONE FENCE COMPANY
FEDERAL SHIPBUILDING AND DRY DOCK COMPANY
ILLINOIS STEEL COMPANY
MINNESOTA STEEL COMPANY
NATIONAL TUBE COMPANY
THE LORAIN STEEL COMPANY
TENNESSEE COAL, IRON & R. R. COMPANY
UNIVERSAL PORTLAND CEMENT COMPANY

Pacific Coast Distributors—United States Steel Products Company, San Francisco, Los Angeles, Portland, Seattle, Honolulu. *Export Distributors*—United States Steel Products Company, New York City

CONTRIBUTOR TO SHEET STEEL TRADE EXTENSION COMMITTEE

J. D. Wingfield's No. 1 Martin, SW cor., Sec. 26-15-15 .. Set 6⅝-in. 2,085 ft; tested little oil and S.W; W.O; T.D. 2,115 ft.

OUACHITA COUNTY—STEPHENS

La. Oil Refining Corp.'s No. 1 Green, 330 ft. S, 330 ft. E, NW cor. Sec. 22-15-19 ..... Completed March 28, 1926; 100 bbls. 1,555 ft.; S.D.; coring 2,265 ft.

UNION COUNTY—CHAMPAGNOLLE

Magnolia Pet. Co.'s No. 1 Schmidt, 300 ft. N, 300 ft. W, SE cor. NW SW, Sec. 5-17-14 ..... Tested 15,000,000 ft. dry gas 2,708-15 ft; cmtd. 8-in. 2,708 ft: T.D. 2,715 f.; tested 2,200,000 ft. gas 2,715 ft.; drlg. water sand 2,872 ft.

UNION COUNTY—EL DORADO

Rice et als' No. 1 W. Raltey, 150 ft. S, 150 ft. E, NW cor. SW, Sec. 7-17-15 ..... Spudded July 18; cmtd. 10-in. at 92 ft.

UNION COUNTY—SMACKOVER

Ark. Fuel Oil Co.'s No. 5 Alphin, Sec. 11-16-16 ..... O.W.D.D.; perforated csg. 1,960-70 ft.; swabbed dry; filled up 40 ft. oil in hour, W. O.

Foster et als' No. 1 J. V. Spohr, 330 ft. S, 330 ft. W, NE cor. SE SW, Sec. 35-15-16 ..... Rig up.

E. M. Jones' No. 1 H. Murphy, 211 ft. S, 211 ft. E, NW cor. Lot 3, NW, Sec. 2-16-15 ..... W.O.S.R; 90 ft. fluid in hole from 17 ft. broken sand; T.D. 1,981 ft.

Lion Oil Ref. Co.'s No. 1 James, CWL, Lot 2, NW, Sec. 6-16-15 ..... Cmtd. 6⅝-in. 1,942 ft; drlg. in; bailing to test 58 ft. broken sand; T.D. 2,000 ft.

Joe Marr's No. 2 Goodwin, 150 ft. E, 250 ft. N, SW cor., Sec. 3-16-16 ..... S.D. 2,470 ft.

Shell Pet. Co.'s No. 1 Carroll, 1,320 ft. W, 330 ft. N, SE cor. NE SW, Sec. 19-18-16 ..... Top Nacatoch 2,053 ft.; arranging deep sand test 12 ft. sand; T.D. 2,611 ft.

Skelly Oil Co.'s No. 8-A Alphin, 1,320 ft. S, center Sec. 24-16-16 ..... Derrick.

EAST TEXAS

PANOLA COUNTY

Eureka Nat. Gas Co.'s No. 1 Jeter, 300 ft. S, 300 ft. W, NE cor. John Womack Sur. ..... Drill stem test estimated 30,000,000 ft. gas; W.O. 6⅝-in. to set; T.D. 2,960 ft.

S. H. Gardner's No. 5 Brumble, 5,966 ft. E, 4,132 ft. S, NW cor. B. C. Jordan Sur. ..... S. D. for water; T.D. 1,000 ft.

S. H. Gardner's No. 4 Roquemore, 5,176 ft. E, 4,432 ft. S, NW cor. B. C. Jordan Sur. ..... Location.

Magnolia Pet. Co.'s No. 3 T. C. Adams, 550 ft. S, 280 ft. E, NW cor. Jas. Matthews Sur. ..... Bailing to test; T.D. 2,850 ft.

Magnolia Pet. Co.'s No. 5 G. C. Tiller, 1,114 ft. W, 303 ft. N, SE cor. Jane Thorpe Sur. ..... Drlg. 1,600 ft.

Magnolia Pet. Co.'s No. 6 G. C. Tiller, 393 ft. S, 1,990 ft. E, NW cor. Jane Thorpe Sur. ..... Location.

Nat. Gas Prod. Co.'s No. 10 Roquemore, B. C. Jordan Sur. ..... Began drlg. Oct. 20; cmtd. 10-in. 42 ft.

Nat. Gas Prod. Co.'s No. 11 Roquemore, B. C. Jordan Sur. ..... Rigging up.

Nemours Corp.'s No. 6 G. C. Tiller, 2,330 ft. S, 300 ft. W, NE cor. W. D. Matthews Survey ..... Location.

The Texas Co.'s No. 7 G. W. Brumble, 3,415 ft. W, 330 ft. N, SE cor. E. F. Mitcheson Sur. ..... Waiting on 6-in. to set; T.D. 2,241 ft.

The Texas Co.'s No. 8 G. W. Brumble, 1,085 ft. E, 330 ft. N, SW cor. John Womack Sur. ..... Derrick.

WILDCAT OPERATIONS IN LOUISIANA-ARKANSAS

(Continued from Page 57)

CATAHOULA PARISH

P. J. Becker, trustee's No. 1 Tull, SW cor. NE NE, Sec. 33-12-15 ..... Fishing 7 joints drill stem; T.D. 2,475 ft.

Longstreet Synd.'s No. 1 Ramsey, NE cor. SW NE, Sec. 33-12-16 ..... Changing to heavy rig and arranging to sidetrack; T.D. 2,802 ft.

Magnolia Pet. Co.'s No. 1 Anna Mason, 990 ft. S, 990 ft. E, NW cor. SW, Sec. 27-13-11 ..... Drlg. 2,550 ft.

FRANKLIN PARISH

Davis et als' No 1 Moore, 600 ft. W, 200 ft. S, NE cor. Sec. 12-11-6 ..... S.D. 1,430 ft.

Franklin Oil & Gas Co.'s No. 1 J. T. O'Brien, 300 ft. N, 300 ft. E, SW cor. NW, Sec. 17-15-9 ..... Rigging up.

MOREHOUSE PARISH

J. P. White's No. 1 Chess-Wymond, Sec. 32-19-4 ..... Tested S.W. 3,025 ft; W.O.

Rainbow Oil Co.'s No. 1 Louisville Cooperage Co., 990 ft. S and E, NW cor. NE, Sec. 33-22-8 ..... Derrick.

NATCHITOCHES PARISH

S. D. McDaniel's No. 2 Clark & Morse, 800 ft. E, 350 ft. N, C, Sec. 23-5-6 ..... Tested 1,000,000 ft. gas and S.W. 8 ft.; S.D. for orders; T.D. 2,536 ft.

Nichols & Wilder's No. 1 Clark, 150 ft. W, 250 ft. N, SE cor., Sec. 10-10-8 ..... Rigging up.

Robeline O. & G. Co.'s No. 1, NE SW, Sec. 7-8-9 ..... Drill stem stuck; waiting orders; claim show gas; T.D. 3,230 ft.

OUACHITA PARISH

S. D. Hunter's No. 1 West Va. Lbr. Co. N½ NE, Sec 25-18-5 ..... Now J. L. Bullock, tr.; cmtd. 15½-in. 147 ft.; 12½-in. 820 ft.

RAPIDES PARISH

Ayers Bros.' No. 1 Wickliff, 2,790 ft. N, 150 ft. E, SW cor., Sec. 9-5n-2e ..... S.D. for water; T.D. 900 ft.

RED RIVER PARISH

W. D. Ball's No. 1 Krumholtz, 660 ft. S, 660 ft. S, NW cor., Sec. 32-14-10 ..... S.D., waiting orders 950 ft.

Benedum & Trees Oil Co.'s No. 1 Franklin Realty Co., 350 ft. E, 350 ft. S, NW cor., Sec. 29-11-9 ..... Drlg. lime 3,616 ft.

Eylers O. & G. Co.'s No. 4 Chaffraix, 150 ft. S, 170 ft. W, NE cor. SW SE, Sec. 30-12-10 ..... Arranging to test at 2,708 ft.

LeGrande et als' No. 1 Sample, Sec. 11-14-11 ..... Rigging up.

D. H. Riddick's No. 1 Johnson, 500 ft. N, 500 ft. W, SE cor., Sec. 17-12-10 ..... Now Eylers O. & G. Co.'s; began drlg. Oct. 20; cmtd. 10-in. 203 ft.

RICHLAND PARISH

Austin & McDonald's No. 1 Hunt, 594 ft. N, 660 ft. E, SW cor., Section 13-17-5 ..... Derrick.

Austin & McDonald's No. 2 Millsaps, SW cor., Sec. 17-17-6. Waiting orders; T.D. 2,679 ft.

Austin & McDonald's No. 3 Millsaps, 1,980 ft. S, 660 ft. E, NW cor., Sec. 16-17-6 ..... Tested S.W.; W.O. 2,477 ft.

Austin & McDonald's No. 4 Millsaps, NW cor., Sec. 16-17-6. Location.

Austin & McDonald's No. 5 Millsaps, 2,640 ft. N, 1,320 ft. W, SE cor., Sec. 8-17-6 ..... Derrick.

Industrial Gas Co.'s No. 1 A. T. Davidson, 1,856 ft. S, 916 ft. E, NW cor. Sec. 6-16-7 ..... Began drlg. Oct. 31; set 162 ft. of 12½-in.; T.D. 344 ft.

Industrial Gas Co.'s No. 1-A Jack Davidson, N 1 degree W. 1,094 ft. S. 2,501 ft. E. NW cor. Sec. 6-16-7 ..... Began drlg. Nov. 3; set 174 ft. of 12½-in.

Industrial Gas Co.'s No. 1 Ruston Drlg. Co., 1,980 ft. S, 1,955 ft. E, NW cor. Sect. 7-16-7 ..... Began drlg. Nov. 5; drlg. 50 ft.

Palmer Corp.'s No. 2 Miles, 723 ft., E, 660 ft. S, NW cor. NE, Sec. 12-17-6 ..... Cmtd. 6-in. 2,315 ft.

Triangle Drlg. Co. and Woodley Pet. Co.'s No. 1 G. L. Cumpton, 660 ft. S, 660 ft. W, NE cor. NW SE, Sec. 16-17-7 ..... Began drlg. Nov. 3; drlg. 50 ft.

SABINE PARISH

R. L. Gay's No. 1-A Bowman-Hicks, 900 ft. S, 200 ft. E, C, Sec. 34-8-12 ..... Drlg. 2,378 ft.

R. L. Gay's No. 5 Bowman-Hicks, 1,120 ft. W, 920 ft. N, SE cor., Sec. 14-7-14 ..... Cmtd. 6-in. 2,090 ft.

R. L. Gay, trustee's No. 1 Long-Bell Lbr. Co., NE cor. NW NW, Sec. 26-8-14 ..... Fishing job 3,533 ft.

R. L. Gay, trustee's No. 2 Sabine Lbr. Co., Sec. 23-7-14.. Drlg. 3,695 ft.

Sabine O. & G. Co.'s No. 1 Anderson, 200 ft. N, 200 ft. E, SW cor. SW NW, Sec. 19-18-13 ..... Drlg. 1,250 ft.

A. H. Trevor's No. 1 Long-Bell, 330 ft. S. 330 ft. E, NW cor. SW NW, Sec. 29-8-13 ..... Reported dry and aband. 3,535 ft., in error; fished out bailer; tested 250,000 ft. gas and small show oil 3,535 ft; drlg. lime 3,564 ft.

UNION PARISH

Fred Stovall's No. 1 Stovall, 1,320 ft. E, 350 ft. N, SW cor., Sec. 32-23-4 ..... Rig up.

WEBSTER PARISH

F. M. Fuller's No. 1 Monzingo, 200 ft. N, 200 ft. W, SE cor., Sec. 27-18-8 ..... Derrick.

Paul C. Warren et al's No. 1 Martin, 305 ft. N, 212 ft. E, SW cor. Sec. 20-20-9 ..... Drlg. 108 ft.

ARKANSAS

ASHLEY COUNTY

Ark. Fuel Oil Co.'s No. 1 Crossett Lbr. Co., 330 ft. E, 330 ft. S, NW cor., Sec. 1-19-7 ..... Derrick.

J. G. Marcum, trustee's No. 1 McGarry, 300 ft. W, 100 ft. S, C, Sec. 9-19-4 ..... Top gas rock 2,846 ft.; drlg. 3,198 ft; reaming to bottom 3,198 ft.

CLARK COUNTY

Wm. Henry, trustee's No. 1 Clark, Sec. 34-9-21 ..... S.D. 1,200 ft.

COLUMBIA COUNTY

Talbot & Markle's No. 1 Copeland, 300 ft. S, 300 ft. W, NE cor. SE NW, Sec. 31-19-19 ..... Drlg. 3,680 ft.

FAULKNER COUNTY

Gold Creek Oil & Gas Co.'s No. 2 Stermer, SE cor. NW SE, Sec. 17-4-13 ..... Rigging up.

GARLAND COUNTY

Givens et als' No. 1 Garrett, 660 ft. S, 660 ft. W, C, Sec. 1-3-19 ..... Began drlg. Aug. 10, 1926; hard sand 3,168-96 ft.; claims show gas; drlg.

GRANT COUNTY

Jones & Watkins' No. 1 Meek, Sec. 5-4-11 ..... S.D. 1,400 ft.

JOHNSON COUNTY

Ark.-La. P. L. Co.'s No. 2 Bynum, Sec. 12-10-24 ..... Drlg. shale 3,700 ft.

LITTLE RIVER COUNTY

A. L. Buck's No. 1 Greason, NW NW, Sec. 25-12-32 .... Drlg. 1,783 ft.

McDonald & Shaw's No. 1 W. E. Black, 240 ft. N, 450 ft. W, SE cor. SE NE, Sec. 13-13-25 ..... S.D. 1,542 ft.

LOGAN COUNTY

Ark. Nat. Gas Corp.'s No. 1 Hanna, Sec. 26-7-23 ..... Drlg. heaving shale 4,140 ft.

MADISON COUNTY

Phillips Pet. Co. and F. S. Craver's No. 1, C, Sec. 11-14-28. Tested 250,000 ft. gas 63 ft.; drlg. sandy lime 1,300 ft.

MILLER COUNTY

E. B. Lenz et als' No. 1 Bossier Co., NW cor. Sec. 13-15-26 Drlg. shale 3,020 ft.

OUACHITA COUNTY

Copenhaven et als' No. 1 Warnick, Sec. 2-15-17 ..... S.D. 2,190 ft.

C. H. McDonald's No. 1 Fogle, Sec. 13-14-16 ..... S.D. 2,301 ft.; W.O.

Kobler & Erickson's No. 1 Rumph & Tyson, 300 ft. N, 300 ft. W, SE cor. Sec. 13-15-15 ..... Rig up.

The Texas Co.'s No. 1 Avera, 250 ft. N, 250 ft. E. SW cor., Sec. 35-15-15 ..... Cleaning out; T.D. 1,984 ft.

Wesson et als' No. 1 Booth, Sec. 12-15-19 ..... S.D. 2,203 ft.

POPE COUNTY

Cosden Oil Co.'s No. 1 Mo. Pac. R.R., 660 ft. N, 660 ft. E, SW cor. NW SE, Sec. 13-9-9 ..... Rigging up.

PRAIRIE COUNTY

Transcontinental Oil Co.'s No. 1 Louis Novak, 330 ft. E, 330 ft. N, SW cor. SW NE, Sec. 36-2n-6 ..... Cmtd. 8-in. 2,058 f.; T.D. 2,060 ft.

UNION COUNTY

Addie & Modisette's No. 1 Union Sawmill, SW cor. SW SE, Sec. 25-19-12 ..... Location.

Ark. Drlg. Co.'s No. 1 Norris, 150 ft. S, 150 ft. W, NE cor. SE SE, Sec. 17-18-12 ..... Drlg. lime 2,520 ft.

Sam Arrendale's No. 1 Gallagher & Nelson, 200 ft. N and W, SE cor. Lot 5, Sec. 18-18-17 ..... S.D. 2,268 ft.

W. M. Coates, trustee's No. 1 McDuffie, Sec. 32-19-17 .... Cmtd. 6⅝-in. 3,942 ft; to test 4½-ft. sand; T.D. 4,057 ft.

O. W. Estes' No. 1 Felsenthal, 330 ft. S, 330 ft. W, NE cor. NE NW Sec. 2-18-15 ..... S.D; W.O. 125 ft. oil and S.W in hole; T.D. 2,191 ft.

Federal Pet. Co.'s No. 1 Union Sawmill fee, NW cor. NE SW, Sec. 5-17-12 ..... Began drlg. Oct. 25; cmtd. 12¼-in. 152 ft.

E. M. Jones' No. 1 Loutre Lbr. Co., NE cor. NW SW, Sec. 17-19-14 ..... Drlg. 3,221 ft.

E. M. Jones' No. 1 Hardy & Murphy, 216 ft. N, 258 ft. W, SE cor. SW, Sec. 34-19-14 ..... Drlg. 3,940 ft.

Stark et als' No. 1 Ainsworth, NE cor. NW NE, Sec. 8-19-16 ..... Derrick.

T. J. Woodley's No. 1 First Natl. Bank, NW cor., Sec. 34-19-18 ..... Derrick.

VAN BUREN COUNTY

Glenn Cole et als, trustee's No. 1 Scanlan, 200 ft. S, 200 ft. W, NE cor. SE NW, Sec. 5-19-13 ..... S.D. 50 ft.

WASHINGTON COUNTY

O'Hara & Shetterly's No. 1 Boyd, SE cor. SE NE, Sec. 12-16-32 ..... Spudded Sept., 1928; S.D. 140 ft.; resumed drlg. Aug. 25; U.R.; T.D. 150 ft.

C. H. Willoughby's No. 1 Jones, Sec. 24-16-30 ..... Cmtd. 6-in. 1,320 ft.; S.D. 1,342 ft.

Lincoln Leaseholding Synd.'s No. 1 Lincoln, Sec. 20-15-32. S.D. 1,040 ft.; repairs.

WHITE COUNTY

Letona Synd.'s No. 1 Letona, SE cor. NW SW, Sec. 35-9-8. Drlg. black caving shale 3,490-3,500 ft.

EAST TEXAS

CAMP COUNTY

Rogers et als' No. 1 Enfelt, R. M. Montgomery Sur. .... Tested dry 1,870 ft.; S.D. 1,930 ft.

RED RIVER COUNTY

D. M. Buffington's No. 1 Hossier, E. Hughhart Sur. .... Drlg. 2,050 ft.

Shad Harper's No. 1 W. R. Garland, J. Wagley Sur. ..... S.D. 1,862 ft.

Johnson Pet Co.'s No. 2 Randolph, Edward Dean Sur.. S.D. 2,000 ft.

SHELBY COUNTY

Benedum & Trees Oil Co.'s No. 1 Pickering Lbr. Co., 300 ft. S, 300 ft. W, NE cor. Lot 20, D.T.F. Yordt Sur... Trying to kill salt water flow 2,862 ft.

Chapperall Oil Co.'s No. 2 Holt, Matthew Moore Sur... S.D. for orders 3,004 ft.

Gulf Ref. Co.'s No. 2 Pickering, 463 ft. S, 29 ft. W, SW cor. P. W. Harvey Sur. in J. H. Patterson Sur. ..... Drlg. chalk 2,075 ft.

MISSISSIPPI

ALCORN COUNTY

Alcorn Pet. Co.'s No. 1 Matthews, SE cor., Sec. 14-2s-7e.. Drlg. 2,700 ft.

CHICKASAW COUNTY

Hightower & Golson's No. 1 Flemming, NE cor., Sec. 20 13-3 ..... Quicksand 1,240 ft.

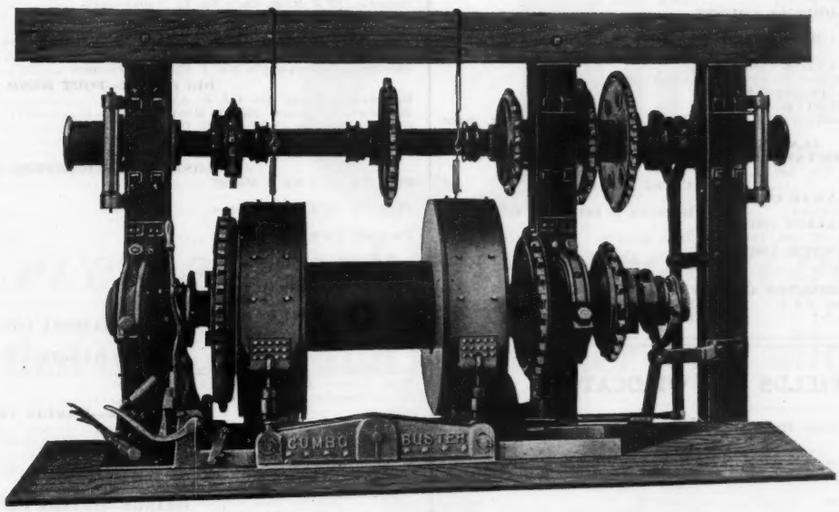
HINDS COUNTY

Harry Gerson's No. 1 Edward House, Blk. 16, West Jackson Subd., City of Jackson, in Twp. 5n, Range 1e .... Rig up.

ONE MAN

Can Handle Long Strings of Pipe

With This New Compounded Brake



"GUMBO BUSTER" Roller Bearing Draw Works

This newly designed roller bearing draw works has a new brake on which the leverage is compounded 2½ to 1. The brake bands are 13" wide and are equalized. The compound leverage and wide equalized brake bands increase the life of the brake linings, and enable one man to easily handle long strings of pipe. ALL CLUTCHES are operated from driller's position by conveniently located foot pedals.

1. 7" Line Shaft and 8" Drum Shaft of heat treated steel.
2. Drum operates on two large roller bearings enclosed in two self-aligning bearing housings.
3. All brake and clutch shifting rigging mounted on one base, which can be moved as a unit, facilitating setting up draw works, assuring proper rigid assembly.
4. Cat Line Rollers are extra large in diameter and operate on roller bearings.
5. Clutch blocks and sprockets of chrome nickel steel; clutch blocks heat treated; heavy steel Jack Posts.

WRITE FOR FULL INFORMATION

Republic Supply Company

OIL AND GAS WELL SUPPLIES

Cable and Rotary Tools

GENERAL OFFICES: HOUSTON, TEXAS

Oscar Brown's No. 1 Riverside (formerly Hennessee et als') SE cor. SE SW, Sec. 23-16-5 ..... Set 12½-in. 30 ft; S.D. 1,050 ft.
Mrs. Reeder et als' No. 1 State, SE cor. NW NW, Sec. 25-6-1e ..... S.D. 2,895 ft.
South Christian Institute's No. 1 fee, SE SW, Sec. 29-6-4. Waiting on csg. to set; T.D. 1,203 ft.

HUMPHREYS COUNTY

E. C. Steele et als' No. 1 C. B. Box, SE cor. SE NE, Sec. 25-14-4w ..... Set 12½-in. 60 ft.; S.D.

LAUDERDALE COUNTY

Lauderdale O. & G. Co.'s No. 1 Lackey, 990 ft. S and E, NW cor. NE, Sec. 2-7-16 ..... Cored sand, shale and gumbo 3,494-2,500 ft.; S.D. 2,786 ft.
Meridian O. & G. Co.'s No. 1 Hauser, Sec. 33-8-18 .... S.D., gumbo 2,410 ft.
J. R. Smith Oil Co.'s No. 1 C. F. Craig, Sec. 2-6-14 ..... Derrick.

LAFAYETTE COUNTY

Banks-Goode et als' No. 1 May, 113½ rods S, 26 rods E, NW cor. SW, Sec. 22-10-1w ..... Derrick.

LINCOLN COUNTY

La.-Miss. Oil Co.'s No. 1 Pat Case, NE NE, Sec. 21-8-6 ... Spudded Feb. 17, 1929; S.D. 50 ft., resumed drlg. Aug. 13; cmtd 12½-in. 368 ft.; S.D., salt water sand 1,213 ft.

MONROE COUNTY

Amory Dev. Co.'s No. 1 Bourland, Sec. 2-13-19 ..... S.D.; waiting for 5 3/16-in. csg 2,580 ft.
Amory Pet. Co.'s No. 1 Hall, Sec. 8-13-19 ..... Fish. for liner and tools 3,045 ft.
Park Bowser et als' No. 1 Cowart, second hole, Sec. 2-12-19 ..... S.D. 30 ft.

RANKIN COUNTY

Home Oil Prod. Co.'s No. 1 E. P. Rainey, NW NW, Sec. 13-5-1e ..... Claim show gas 2,912 ft.; recmtd. 10-in. casing for test.

WARREN COUNTY

El Dorado Oil Co.'s No. 1 Dornbush, Sec. 8-18-5 ..... Drlg. 2,400 ft.

YALOBUSHA COUNTY

Philip Bros.' No. 1 James, Sec. 20-11-5 ..... Coring 3,420 ft.
Carter Oil Co. and J. D. Collett's No. 1 Blackmur, 330 ft. S, 990 ft. W, C, Sec. 14-11-4 ..... Rigging up.

YAZOO COUNTY

Amerada Pet. Co.'s No. 1 Doherty, SW SW Sec. 24-12-2 Location.

TENNESSEE

DECATUR COUNTY

Chester County Oil Co.'s No. 1 Montgomery ..... Cmtd. 6-in. 1,040 ft.; drlg. hard gray lime 1,165 ft.

ALABAMA

CHOCTAW COUNTY

Robinson & Greer's No. 1 Douglas Oil Co., 320 ft. N, C Sec. 15-19-2 ..... Coring 3,400 ft.

LAMAR COUNTY

Briggs & Knapp's No. 1 Wefel, Sec. 25-12-14 ..... Reaming to bottom; T.D. 1,180 ft.

MARION COUNTY

Hobson and others' No. 1 John Clark, SE Sec. 29-11-14 Drk. pattern.

SUMTER COUNTY

B. W. Bates' No. 1 fee, Sec. 3-18-1 ..... U.R. surface csg. at 300 ft.; to set 6-in

WASHINGTON COUNTY

S. A. Hobson's No. 1 Hobson Bros., Sec. 9-8-2 ..... S.D; S.W. flow at 1,450 ft., T.D
S. A. Hobson's No. 1 Wilson, Sec. 27-7-1 ..... S.D. 700 ft.

GULF COAST FIELDS AND WILDCATS

(Continued from Page 58)

Humble & Valley's No. 6 Woodley ..... Location.
Humble & Valley's No. 5-B Grawunder ..... Derrick.
Humble & Valley's No. 6-B Grawunder ..... Cemented casing 1,191 ft.
Humble & Valley's No. 7-B Grawunder ..... Drlg. sand rock 950 ft.
Humble & Valley's No. 10-B Grawunder ..... Derrick.
Humble & Valley's No. 4-C Grawunder ..... Drlg. sticky shale 193 ft.
Humble & Valley's No. 3 Helmuth ..... Location.
Humble & Valley's No. 3 Jackson ..... Location.
Humble & Valley's No. 6 Urban ..... Drlg. shale and lime 1,730 ft.
Humble & Valley's No. 7 Urban ..... Derrick.
Humble & Valley's No. 5 Saunders ..... Derrick.
Humble & Valley's No. 6 Mueller ..... Drlg. shale and lime 2,430 ft.
Humble & Valley's No. 7 Mueller ..... Drlg. 200 ft.
Humble & Valley's No. 8 Mueller ..... Location.
Humble & Valley's No. 4-A Bracey ..... Drlg. shale and lime 2,810 ft.
Humble & Valley's No. 5-A Bracey ..... Drlg. shale 1,309 ft.
Humble & Valley's No. 3 Ollie Wilson ..... Drlg. sticky shale 1,549 ft.
Humble & Valley's No. 1 McCasland ..... Comp. flowing 63 bbls. oil 3,120 ft.
Humble & Valley's No. 5 Gotosky ..... Drlg. sandy shale 3,230 ft.
Humble & Valley's No. 6 Gotosky ..... Derrick.
Humble & Valley's No. 3 Sherrill ..... Drlg. lime 1,062 ft.
Humble & Valley's No. 1 Duncan, State land ..... Location.
Humble & Valley's No. 5 Thompson ..... Drlg. 1,021 ft.
Humble & Valley's No. 6 Thompson ..... Location.
Humble & Valley's No. 4 Payne ..... Derrick.
Humble & Valley's No. 5 Payne ..... Location.
Humble & Valley's No. 6 Payne ..... Location.

DE WALT—FORT BEND COUNTY

Humble Oil & Refg. Co.'s No. 8 Brazos ..... Comp. flowing 113 bbls. oil 3,674 ft.
Humble Oil & Refg. Co.'s No. 9 Camp ..... Drlg. 900 ft.
Humble Oil & Refg. Co.'s No. 1 Hagenson ..... Comp. pumping 75 bbls. fluid 30 per cent oil, 3,811 ft.
Humble Oil & Refg. Co.'s No. 8 Hamner ..... Drlg. gumbo 1,214 ft.
Humble Oil & Refg. Co.'s No. 10 Sugarland (workover)... Rigging up to deepen.
Humble Oil & Refg. Co.'s No. 11 Sugarland ..... Rig.
Humble Oil & Refg. Co.'s No. 12 Sugarland ..... Rigging up to pump 3,785 ft.
Humble Oil & Refg. Co.'s No. 13 Sugarland ..... Derrick.
Humble Oil & Refg. Co.'s No. 7 Nelson ..... Drlg. gumbo 1,203 ft.
Humble Oil & Refg. Co.'s No. 1 Peterson ..... To test sand and shale 3,736 ft.
Humble Oil & Refg. Co.'s No. 1-B Sugarland ..... Drlg. sand and shale 3,524 ft.
Humble Oil & Refg. Co.'s No. 1-C Bankers Mortgage..... Drlg. sandy shale 3,392 ft.; 6⅝-in. casing cemented 3,325 ft.

HUMBLE—HARRIS COUNTY

Continental Oil Co.'s No. 1 Cezeaux, south side ..... Shut down, total depth 4,520 ft.
Gardner Oil Co.'s No. 1 Perkins ..... No report.
Humble Oil & Ref. Co.'s No. 5 Williams ..... Drlg. sticky shale 5,580 ft.
Humble Oil & Refg. Co.'s No. 6 Williams ..... Rig.
Humble Oil & Refg. Co.'s No. 7 Williams (south) ..... Drlg. 4,000 ft.
Humble Oil & Refg. Co.'s No. 1 Glass, south ..... Drlg. shale 6,647 ft.
Humble Oil & Refg. Co.'s No. 1 Oates ..... Drlg. shale 4,808 ft.
Humble Oil & Refg. Co.'s No. 1 Trahon ..... Cemented 9⅝-in. casing 4,554 ft.
Harvey Smith et al's No. 2 Ward ..... Drlg. gumbo 3,645 ft.
Morris Investment Co.'s No. 1 fee ..... Drlg. gumbo 1,760 ft.
South Texas Petroleum Co.'s No. 11 Morris, south side .. Comp. flowing 1,250 bbls. pipe line oil 5,349 ft.
South Texas Petroleum Co.'s No. 12 Morris (south) ..... Drlg. gumbo and lime 3,531 ft.
South Texas Petroleum Co.'s No. 13 Morris (south)..... Rig.
South Texas Petroleum Co.'s No. 1 Lee, south flank .. Drlg. shale 4,631 ft.
Sun Oil Co.'s No. 3 Bender (northwest) ..... Drlg. gumbo and lime 2,209 ft.
The Texas Company's No. 270 Landslide (south) ..... Drlg. sticky shale 4,654 ft.
The Texas Company's No. 41 Stevenson (south) ..... Drlg. sand and boulders 4,283 ft.
The Texas Company's No. 1 Dunman ..... Comp. flowing 8,500 bbls. pipe line oil on ⅝-in. choke; 4,956 ft.
The Texas Company's No. 23 House ..... Drlg. sticky shale and boulders 4,858 ft.
West Production Co.'s No. 2 Foster ..... Rig.

BLUE RIDGE—FORT BEND COUNTY

Cunningham Prod. Co.'s No. 6 Blakely (workover) ..... Drlg. 2,437 ft.
Gulf Production Co.'s No. 17 Luscher ..... Abandoned 4,100 ft.
Sinclair Oil & Gas Co.'s No. 5 Davidson (workover)..... Drlg. 4,112 ft.
So. Texas Petroleum Co.'s No. 5 Blakely ..... Drlg. hard sand 3,270 ft.

PIERCE JUNCTION—HARRIS COUNTY

Anderson & Plummer's No. 6 Whitehead (workover) .... Drlg. rock 4,086 ft.
Navarro Oil Co.-Texas Exploration Co.'s No. 17 Dooley... Fishing stuck drill stem 4,520 ft.
Navarro Oil Co.'s No. 2 A. Cain (workover) ..... Drlg. sandy shale 4,796 ft.
Navarro Oil Co.-Humble's No. 5 Dooley ..... Drlg. sandy shale 3,989 ft.
Rio Bravo Oil Co.'s No. 11 B. Settegast ..... Bailed salt water and oil showing 4,625 ft.; to deepen.
Rio Bravo Oil Co.'s No. 16-A Settegast, west ..... Drlg. hard sand and lime rock 3,656 ft.
Rio Bravo Oil Co.'s No. 17-A Settegast, west ..... Drlg. gumbo and shale 1,435 ft.
Saxet Gas Co.'s No. 5 Herman (southwest) ..... Drlg. gumbo and lime 1,550 ft.
Superior Oil Co.'s No. 3 B. Whitehead (workover)..... Rigging to deepen.
J. F. Barron's No. 3 Fitzsimmons ..... Derrick.
Shaw & Texas Exploration Co.'s No. 2-F Fitzsimmons .. Derrick.
Shaw et al's No. 4 E. Fitzsimmons ..... Location.
Smith & Plummer's No. 1 Settegast ..... Drlg. gumbo 3,560 ft.

LIBERTY—LIBERTY COUNTY

Abercrombie & Harrison's No. 4 fee (workover) ..... Pulling screen 3,300 ft.
Empire Gas & Fuel Co.'s No. 7 Groggan ..... Abandoned in salt 3,600 ft.
Empire Gas & Fuel Co.'s No. 5 Groggan ..... No report.
Liberty Oil & Sulphur Co.'s No. 1 Monroe ..... Abandonid 539 ft.
Neches Oil Co.'s No. 2 Turner ..... Abandoned 776 ft.
Sun Oil Co.'s No. 52 Mitchell ..... Drlg. 1,700 ft.
Sun Oil Co.'s No. 53 Mitchell ..... Drlg. gumbo 2,200 ft.
The Texas Company's No. 5 Green (workover) ..... Rigging to work over.
Yount Lee Oil Co.'s No. 19 Mitchell ..... Drlg. sand and boulders 2,876 ft.

HULL—LIBERTY COUNTY

Empire Gas Fuel Co.'s No. 27 Barngrover (workover)... Drlg. 3,659 ft.
Empire Gas & Fuel Co.'s No. 30 Barngrover ..... Spudded.
W. B. Flynn's No. 8 Harrison (workover) ..... Pulling liner.
Gulf Production Co.'s No. 50 Phoenix (workover) ..... Drlg. 3,289 ft.
Gulf Production Co.'s No. 56 Phoenix (workover) ..... Comp. flowing 125 bbls. fluid 10 per cent water, 3,469 ft.
Republic Production Co.'s No. 35 Dolbear (workover) .. Abandoned 4,598 ft.
Humble Oil & Refg. Co.'s No. 12 Hooks-Spell ..... Drlg. hard shale 3,215 ft.
Ocean Springs Oil Co.'s No. 1-H Palmer ..... Rig.
Republic Production Co.'s No. 76 Dolbear (workover) ... Drlg. 3,061 ft.
Republic Production Co.'s No. 128 Dolbear (workover)... Drlg. 2,512 ft.
The Texas Company's No. 7 Hannah-Vacuum (workover). To deepen.
The Texas Company's No. 8 Hannah-Vacuum ..... Location.

BIG CREEK—FORT BEND COUNTY

Benedum & Trees' No. 1 J. F. Ahlers ..... Derrick.
Benedum & Trees' No. 1 Moore ..... Drlg. hard shale and lime 3,975 ft.
Gulf Production Co.'s No. 25 Davis (workover) ..... Drlg. 3,896 ft.
Gulf Production Co.'s No. 57 Davis ..... Drlg. gumbo and lime 2,418 ft.
The Texas Company's No. 3 fee (old well) ..... Drlg. oil sand 4,177 ft.

LOST LAKE—CHAMBERS COUNTY

Pure Oil Co.'s No. 1 Mayes ..... Set 5 joints screen 2,832 ft.; running tubing.
Pure Oil Co.'s No. 4 Mayes ..... Swabbed dry 2,781 ft.; pulling screen.
Pure Oil Co.'s No. 5 Mayes ..... Flowing heads estimated at 55 bbls. at intervals of 3 to 4 hours; 2,648 ft.
Pure Oil Co.'s No. 6-A Mayes ..... Derrick.
Pure Oil Co.'s No. 7 Mayes ..... Drlg. gumbo 2,108 ft.
Pure Oil Co.'s No. 8 Mayes ..... Drlg. gumbo and lime 1,771 ft.
Pure Oil Co.'s No. 3 Lost Lake ..... Drlg. tough gumbo 3,919 ft.

NASH—BRAZORIA COUNTY

Rycade Oil Corp.'s No. 26 Wisdom ..... Drlg. hard sand and shale 5,328 ft.

BATSON—HARDIN COUNTY

Ada Belle Oil Co.'s No. 129 Carlton ..... Rigging to pump 939 ft.
East Batson Oil Co.'s No. 9 B.B.B.&C. ..... Bailing 871 ft.
B. O. Poole's No. 2 Paraffin ..... Bailing 917 ft.

SOUR LAKE—HARDIN COUNTY

Austin et al's No. 1 Watson ..... Rig.
Lake View Oil Co.'s No. 7 Minor ..... Rigging to pump 2,189 ft.
Gilbert Oil Co.'s No. 107 Gilbert..... Rigging up.
M. E. Peveto Oil Co.'s No. 1 Cannon ..... Set casing to test oil sand 1,252 ft.
The Texas Company's No. 305 fee ..... Location.

ORANGE—ORANGE COUNTY

Brownie Babbett Oil Co.'s No. 8 McLean (workover) .... Swabbing 3,558 ft.
Tillery Oil Co.'s No. 3-B State (workover)..... Tested salt water 3,429 ft.; to deepen.

GOOSE CREEK—HARRIS COUNTY

Cedar Bayou Oil Co.'s No. 11 Busch ..... Drlg. 2,300 ft.
Russell Ferrell's No. 4 Gillette (workover) ..... Pulling screen to deepen.
Humble Oil & Refg. Co.'s No. 19 Ashbell-Smith ..... Drlg. 2,296 ft.
Humble Oil & Refg. Co.'s No. 76 Simms-Smith ..... Drlg. sticky shale 4,063 ft.
Lake Shore Oil Co.'s No. 4 Duke ..... Shut down 2,594 ft.
Lee & Scott's No. 3 Scott ..... Total depth 2,610 ft.; set screen 1,220 ft.
J. M. West, trustee, No. 3 Scorrega ..... Drlg. 2,357 ft.

SPINDLETOP—JEFFERSON COUNTY

Yount Lee Oil Co.'s No. 28 McFaddin (workover) ..... Pulling liner 5,399 ft.
Yount Lee Oil Co.'s No. 85 McFaddin (workover) ..... Comp. flowing 750 bbls. oil 2,848 ft.
Yount Lee Oil Co.'s No. 97 McFaddin (workover) ..... Pulling screen to deepen.
Yount Lee Oil Co.'s No. 116 McFaddin ..... Comp. flowing 1,000 bbls. oil on ⅛-in. choke, 4,804 ft.
Yount Lee Oil Co.'s No. 118 McFaddin ..... Drlg. sand 4,704 ft.
Yount Lee Oil Co.'s No. 119 McFaddin ..... Drlg. sand 3,243 ft.
Yount Lee Oil Co.'s No. 57 Gladys City (workover) .... Drlg. sand 3,858 ft.
Yount Lee Oil Co.'s No. 96 Gladys City ..... No report.
Yount Lee Oil Co.'s No. 97 Gladys City ..... Fishing 4,715 ft.
Yount Lee Oil Co.'s No. 98 Gladys City ..... Drlg. 2,841 ft.
Yount Lee Oil Co.'s No. 11 fee (workover) ..... Drlg. sand lime 3,841 ft.

WEST COLUMBIA—BRAZORIA COUNTY

Continental Oil Co.'s No. 1 Hogg ..... Shut down, total depth 5,818 ft.
Gulf Production Co.'s No. 3-B Hogg ..... Drlg. hard sand showing oil 3,335 ft.
Humble Oil & Refg. Co.'s No. 3 Smith ..... Reaming 5,050 ft.
Saxet Oil Co.'s No. 2 Hogg ..... Drlg. gumbo 1,933 ft.
The Texas Company's No. 25 Arnold ..... Drlg. gumbo 1,257 ft.

HIGH ISLAND—GALVESTON COUNTY

Gulf Production Co.'s No. 5-A Smith ..... Drlg. 3,200 ft.
Marrs McLean's No. 6 Cade (old well) ..... Fishing drill pipe 3,636 ft.
Marrs McLean's No. 12 Cade (workover) ..... To deepen.
Marrs McLean's No. 16 Cade ..... Drlg. 3,800 ft.

ORCHARD—FORT BEND COUNTY

Gulf Production Co.'s No. 19 Moore ..... Fishing drill stem; sticky shale 6,569 ft.

DAMON MOUND—BRAZORIA COUNTY

H. R. Cullen's No. 2 Smith ..... Rig.

REFUGIO—REFUGIO COUNTY

Benedum & Trees' No. 3 Rooke ..... Rebuilding derrick to deepen 3,865 ft.
Morgan Oil Corp.'s No. 2 Fox heirs ..... Set 10-in. casing 514 ft.
Morgan Oil Corp.'s No. 3 City ..... Drlg. shale 3,130 ft.
Morgan Oil Corp.'s No. 1 Johnson ..... Derrick.
Morgan Oil Corp.'s No. 1 Strauch ..... Drlg. gumbo 1,537 ft.
Hewitt et al's No. 2 Cemetery ..... Testing sand 3,656-79 ft.
Houston Gulf Gas Co.'s No. 6 Shelly ..... Trying to sidetrack 1,600 ft.; total depth 5,699 ft.
Houston Gulf Gas Co.'s No. 1 Lambert ..... Drlg. gumbo 2,074 ft.
Houston Gulf Gas Co.'s No. 8 Shelly ..... To test oil sand 3,668 ft.
Houston Gulf Gas Co.'s No. 4 Fannie Heard (workover) .. Setting casing to test gas sand 3,608-11 ft.
Houston Gulf Gas Co.'s No. 8 Fannie Heard ..... Set screen to test oil sand 3,671-78 ft.
Houston Gulf Gas Co.'s No. 3 Tom Heard ..... Losing returns 743 ft.
Houston Gulf Gas Co.'s No. 2 Cummings ..... Derrick.
Houston Gulf Gas Co.'s No. 2 Morgan Shelly ..... Set 12½-in. casing 541 ft.
Korona Oil Co.'s No. 4 Reilly ..... Rig.
Korona Oil Co.'s No. 5 Reilly ..... Set 12½-in. casing 451 ft.
Mission Drlg. Co.'s No. 1 J. F. B. Heard ..... To abandon, total depth 3,661 ft.
Mission Drlg. Co.'s No. 3 Shelly ..... Comp. flowing 120 bbls. 3,656-83 ft.

A Drop of 3 inches

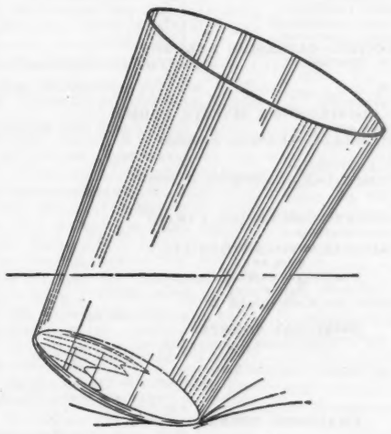
not even enough to break a glass

is all that the Guiberson Catcher will allow—

When you think of a string of tubing in your well being unable to receive a shock great enough to break an ordinary drinking glass, then you realize what a thorough measure of protection you have in a Guiberson Tubing Catcher. The Guiberson Tubing Catcher cannot leave the factory unless it operates within three inches, catching its own weight in an empty casing.

The Guiberson Tubing Catcher operates with or without fluid in the hole, due to the strong spring, and in spite of the retarding action of mud or paraffin, due to the heavy striker weight. Dove-tail tracks guide the slips instantly and accurately to the casing wall, where they take a biting grip. This positive acting, positive protecting tool is available to you anywhere and everywhere.

Fully Patented



"Better Be Safe Than Sorry"

THE GUIBERSON CORPORATION

Box 1106, Dallas, Texas

California Branch: 1506 Santa Fe, Los Angeles

621 Kennedy Bldg., Tulsa — 321 S. Osage St., Ponca City

506 Trust Bldg., Newark, O.

GUIBERSON

BETTER BE SAFE THAN SORRY

Mission Drlg. Co.'s No. 2 Fox (workover) ..... Deepened from 3,670 to 3,673 ft.; trying to kill gas pressure.
Mission Drlg. Co.'s No. 1 Kuykendall ..... Comp. flowing 250 bbls. pipe line oil 3,662-70 ft.
Mission Drlg. Co.'e No. 2 O'Brien ..... Rig.
Mission Drlg. Co.'s No. 1 Eskridge-Heard ..... Drlg. sand 2,520 ft.
Mission Drlg. Co.'s No. 2 Mitchell ..... Reaming 4,321 ft.
Mission Drlg. Co.'s No. 2 Powers ..... Derrick.
Olgufer Oil Co.'s No. 3 Ryalls ..... Rig.
Saxet Oil Co.'s No. 1 Serafine ..... Total depth 3,689 ft.; tested dry gas; to deepen.
Saxet Oil Co.'s No. 1 Ryals ..... Cemented 12½-in. casing 503 ft.
Saxet Oil Co.'s No. 3 Holmes Heard ..... Derrick.
Saxet Oil Co.'s No. 10 Clint Heard ..... Killed well to deepen from sand at 3,682 ft.
Houston Oil Co.'s No. 10 Pratt-Hewitt-Rooke ..... Comp. flowing 100 bbls. pipe line oil ¼-in. choke; 3,703 ft.
Houston Oil Co.'s No. 9 Wilson Heard ..... Cemented 12½-in. casing 494 ft.
Independent Oil & Gas Co.'s No. 1 O'Brien ..... Drlg. shale 5,579 ft.
Independent Oil & Gas Co.'s No. 1 Claude Heard ..... No report.
Independent Oil & Gas Co.'s No. 1 Anna Reilly ..... Cemented casing to test sand 3,688-91 ft.
Independent Oil & Gas Co.'s No. 1-A J. F. B. Heard ..... Rig.
W. L. Pearson, trustee, No. 2 Fox ..... Fishing drill pipe 2,800 ft.
Pearson Properties' No. 1 Bailey ..... Derrick.
Sun Oil Co.'s No. 2 Leisering ..... Cemented 8¼-in. casing to test sand 3,683-88 ft.
Texas Gas Co.'s No. 1 Rogers ..... Killed 1,400 lbs. gas pressure 3,68[illegible] ft.; to deepen.
The Texas Company's No. 1 Clint Heard ..... Cemented casing to test sand 3,664-72 ft.

SOUTH LOUISIANA FIELDS

LOCKPORT—CALCASIEU PARISH

Vacuum & Gulf's No. 3 State ..... Drlg. shale 5,391 ft.

HACKBERRY—CAMERON PARISH

Calcasieu Oil Co.'s No. 5 Lemke ..... Rig.
Calcasieu Oil Co.'s No. 4 Caldwell ..... Drlg. gumbo 4,447 ft.
Calcasieu Oil Co.'s No. 8 Valery ..... Drlg. rock 2,731 ft.
Rycade Oil Corp. and Humble's No. 2 Gulf Land (workover) ..... Comp. flowing 600 bbls. oil 4,323 ft.; set 249 ft. screen.
Rycade Oil Corp.-Humble Oil & Refg. Co.'s No. 4 Gulf Land ..... Rigging.
Yount Lee Oil Co.'s No. 3 Lacey, Old Hackberry ..... Comp. flowing 900 bbls. oil 3,297 ft.
Yount Lee Oil Co.'s No. 2-B Lacey, Old Hackberry ..... Drlg. shale 3,578 ft.
Yount Lee Oil Co.'s No. 2 Carter & Sweeney, Old Hackberry ..... Drlg. gumbo 3,391 ft.
Sunshine Oil Co.'s No. 5 Ellender ..... Comp. flowing 250 bbls. oil 3,142 ft.
J. F. Sutton' No. 1 Duhon (Old Hackberry) ..... Drlg. gumbo 1,946 ft.

JENNINGS—ACADIA PARISH

Jennings Petroleum Co.'s No. 3 Syndicate fee ..... Drlg. 968 ft.
Kathleen Oil Co.'s No. 1 Syndicate (workover) ..... Shut down 3,922 ft.
Ratcliff Oil Co.'s No. 7 Martin Producers (workover) ..... Rigging up to pump 1,814 ft.
The Texas Company's No. 5 Rayne heirs (King tract) ..... Drlg. 4,950 ft.
Yount Lee Oil Co.'s No. 4 Crowley, northeast flank, Section 48-9s-2w ..... Tested salt water 7,557-93 ft.; total depth 8,238 ft.; abandoned.
Yount Lee Oil Co.'s No. 5 Crowley, Sec. 48-9s-3w ..... Location.
Yount Lee Oil Co.'s No. 7 Houssiere-Latrielle, Sec. 47-9s-2w ..... Cem. 7-in. casing 7,100 ft.
Yount Lee Oil Co.'s No. 1 E. F. Simms (northwest side) .. Drlg. 3,948 ft.

EDGERLY—CALCASIEU PARISH

Green Oil Co.'s No. 2 Moore (workover) ..... Shut down 2,844 ft.
Hercules Oil Co.'s No. 3 Paraffin (workover) ..... Drlg. 3,158 ft.
Rex Petroleum Co.'s No. 8 Hunter (workover) ..... Drlg. 3,718 ft.
Rex Petroleum Co.'s No. 1 Narroni (workover) ..... Drlg. 3,175 ft.

VINTON—CALCASIEU PARISH

Gulf Refining Co.'s No. 1 J. W. Gardner ..... Comp. pumping 130 bbls. oil 3,228 ft.
Salt Dome Oil Co.'s No. 2 Shaw ..... Tested dry 2,999 ft.; shut down.
Marrs McLean's No. 4 Gray (workover) ..... Sidetracking 1,259 ft.

BAYOU BOUILLON—ST. MARTIN PARISH

Rycade Oil Corp.'s No. 7 Bouillion fee ..... Fishing drill pipe 4,806 ft.

STARKS—CALCASIEU PARISH

J. O. Davis' No. 1 Industrial ..... Location.
Gulf Production Co.'s No. 16 Lutcher-Moore ..... Rig.

SWEET LAKE—CAMERON PARISH

Pure Oil Co.'s No. 7 Yount Lee ..... Standing cem. 6,881 ft.
Pure Oil Co.'s No. 9 Yount Lee ..... Derrick.

SORRENTO—ASCENSION PARISH

Gulf Refining Co.'s No. 16 United Land Co. ..... Drlg. 2,936 ft.

MISCELLANEOUS WILDCATS

TEXAS

AUSTIN COUNTY

Empire Gas & Fuel Co.'s No. 1 Jackson, San Felipe ..... Drlg. 2,647 ft.
Whittington et al's No. 1 Lass, 4 miles northwest of Bellville ..... Drlg. 3,500 ft.

BRAZORIA COUNTY

Mills Bennett Production Co.'s No. 1 Allen, Allen Dome .. Rig up.
Faust et al's No. 5 Faust ..... Drlg. gumbo 2,311 ft.
Shell Petroleum Corp.'s No. 1 Blakely-Winston, Danbury ..... Cemented 12½-in. casing 1,565 ft.; to test oil sand 1,572-78 ft.
Steel & Strickland's No. 1 Lockridge ..... Rig.

CHAMBERS COUNTY

Chicago Oil Corp.'s No. 1 Lawrence ..... Shut down in gumbo 1,200 ft

FORT BEND COUNTY

Gulf Production Co.'s No. 12 Trone, Long Point ..... Abandoned in heaving shale 6,314 ft.

HARRIS COUNTY

Baldwin and associates' No. 1 Kitzman, Cypress ..... Cleaning hole to work over 4,055 ft.
Golf Crest Oil Co.'s No. 1 Gulf Crest ..... Standing 2,520 ft.
A. F. Belunek's No. 1 Thompson ..... Rig.
Hammond et al's No. 1 Brodt ..... Gumbo 1,190 ft.; shut down after fire.
Higgins Oil & Fuel Co.'s No. 1 Siadous, Mykawa ..... Derrick.
Humble Oil & Refg. Co.'s No. 6 Warren Hockley ..... Reaming 4,664 ft.
Humble Oil & Refg. Co.'s No. 1 Sidlous Mykawa ..... Tested gas and salt water 3,453 ft.; gas volume 20,000,000 ft.; 1,400 pounds rock pressure.
Humble Oil & Refg. Co.'s No. 2 Minnetex ..... Rig.
Humble Oil & Refg. Co.'s No. 2 Woodburn ..... Drill stem test showed sulphur water and gas 2,347 ft.
Cranfill & Reynolds' No. 1 Brown ..... Drlg. sandy shale 2,506 ft.
Rich et al's No. 1 Highlands ..... Derrick.
Torsen et al's No. 1 Stewart ..... Drlg. brown shale 2,405 ft.
Watts Brothers' No. 1 Hubert, Mykawa ..... Drlg. sand and boulders 1,002 ft.
York & Robertson's No. 1 Garrett, Harris & Carpenter Sur. ..... Sandy shale 1,917 ft.; shut down.

JEFFERSON COUNTY

Deep Test Oil Corp.'s No. 1 Faith-McFadden ..... Drlg. 4,336 ft.
Gulf Production Co.'s No. 8 Bordages ..... Spudded.
Gulf Production Co.'s No. 4 Burrell ..... Rig.
River Oil Corp.'s No. 1 Ship Channel, Brown Survey ..... Standing.
Rosedale Oil Co.'s No. 1 Walker ..... No report.
The Texas Company's No. 2 Pipkin, Big Hill ..... Drlg. salt water sand 5,585 ft.
The Texas Company's No. 1 Fitzhugh, Big Hill ..... Drlg. hard shale and lime 4,682 ft.
Vacuum Oil Co.'s No. 1 Herbert-Broussard, T.&N.O. Sur. No. 208. ..... Junked and abandoned 5,673 ft.

LIBERTY COUNTY

Campbell et al's No. 1 fee ..... Rig.
Gray-Tex Oil Co.'s No. 1 Gardner ..... No report.
Gulf Production Co.'s No. 1 Weiser ..... Drlg. 4,173 ft.
Gulf Production Co.'s No. 3 Boyt, Hankamer ..... Drlg. 1,868 ft.
Humble Oil & Refg. Co.'s No. 6 Sterling, Moss Bluff .... Drlg. shale 5,208 ft.
Cranfill Reynolds Co.'s No. 1 Vajdak, Sheeks ..... Drlg. sticky gumbo 4,701 ft.
Cranfill Reynolds' No. 1 Thomas Davis ..... Drlg. 912 ft.

MONTGOMERY COUNTY

Kelley-Baker et al's No. 1 Juerges ..... Drlg. sand 3,543 ft.

ORANGE COUNTY

Gulf Production Co.'s No. 1 J. E. Starks, Port Neches ... Drlg. sandy shale 4,280 ft.
Gulf Production Co.'s No. 1 M. H. Starks, Port Neches ... Derrick.
The Texas Company's No. 1 Polk, Port Neches ..... Fishing 3,007 ft.

WALLER COUNTY

Kirby Petroleum Co.'s No. 1 Rogers San Felipe ..... Drlg. 3,352 ft.
Talbert & Markle's No. 1 Young ..... Drlg. 2,300 ft.

SOUTH LOUISIANA

ASCENSION PARISH

Triumph Oil Corp.'s No. 2 Lacey, Sec. 20-10s-4e ..... Shut down 3,327 ft.

ASSUMPTION PARISH

Gulf Refining Co.'s No. 1 Armitese, Napoleonville ..... Rig.

CAMERON PARISH

Shell Pet. Corp.'s No. 6 Watkins, Black Bayou ..... Drill stem test at 4,890 ft. dry; drlg. deeper.
Shell Pet. Co.'s No. 12 Watkins, Black Bayou ..... Drlg. sandy shale 5,221 ft.
Shell Pet. Corp.'s No. 1 Marceaux, Mallard Bay, Sec. 32-12s-3w ..... Drlg. sandy shale and gumbo 4,162 ft.
The Texas Company's No. 4 Calcasieu Lake, Calcasieu Lake Dome ..... Drlg. black lime rock 5,335 ft.
Yount Lee Oil Co.'s No. 1 Starks, Sec. 1-15s-15w ..... Drlg. 5,512 ft.

IBERIA PARISH

Gulf Refining Co.'s No. 11 State, Loreauville ..... Rig.
Jefferson Lake Oil Co.'s No. 3 Lake Piegneur ..... Drlg. 601 ft.
The Texas Company's No. 4 Vermillion Bay ..... Drlg. gumbo 2,486 ft.

IBERVILLE PARISH

Standard Oil Co.'s No. 2 Schwing, Bayou Blue ..... Set strainer 3,584 ft.; quit flowing.
Standard Oil Co.'s No. 3 Wilbert, Bayou Blue ..... Derrick.
Standard Oil Co.'s No. 4 Wilbert, Bayou Blue ..... Rig.
Standard Oil Co.'s No. 5 Schwing, Bayou Blue ..... Location.

JEFFERSON DAVIS PARISH

Vacuum Oil Co.'s No. 2 DeVilbiss, Roanoke ..... Drlg. water sand 6,443 ft.
Yount Lee Oil Co.'s No. 1 Courtney, Welsh ..... Spudding.

LA FOURCHE PARISH

Gulf Refining Co.'s No. 25 Stark, Thibodaux ..... Rig.
Gulf Refg. Co.'s No. 1 City of New Orleans, Bay Champagne ..... Rig.

PLAQUEMINE PARISH

Humble Oil & Refg. Co.'s No. 1 Cockrell-Moran, Lake Grand Ecaille ..... Derrick.
Humble Oil & Refining Co.'s No. 1 Lake Washington, Lake Grand Ecaille ..... Drlg. 4,275 ft.
The Texas Company's No. 3 Garden Island Bay ..... Spudded.

ST. LANDRY PARISH

Gulf Refining Co.'s No. 2 Gaudet, Port Barre ..... Cemented casing to test oil sand 3,410 ft.
Elbof Exploration Co.'s No. 1 Ledoux, Eunice ..... Drlg. gumbo 1,512 ft.
Herbert-Baker Oil Co.'s No. 1 Fisher, Section 10-3S-4e ... Drlg. 800 ft.

ST. MARTIN PARISH

Bayou Teche Oil Co.'s No. 1 Fournet, Cypress Island ..... Rig.
Ohio Oil Co.'s No. 4 Martin, Hager Dome ..... Drlg. 510 ft.
The Texas Company's No. 1 fee, Hager Dome ..... Drlg. 5,156 ft.
The Texas Company's No. 2 St. Martin, Hager ..... Drlg. 3,946 ft.
The Texas Company's No. 3 fee, Hager ..... Location.
The Texas Company's No. 4 fee, Hager ..... Location
The Texas Company's No. 1 Iberville, Hager ..... Drlg. 1,200 ft.
The Texas Company's No. 2 Iberville, Hager ..... Location.
The Texas Company's No. 3 Iberville, Hager ..... Location.

TANGIPAHOA PARISH

Completion Oil Co.'s No. 1 Amos ..... Drlg. 2,800 ft., gumbo and shale.
Joan Development Co.'s No. 1 Hilton, Sec. 20-9s-9e ..... Cem. 6⅝-in. casing 3,000 ft., standing.

TERREBONNE PARISH

The Texas Company's No. 3 State-Bay St. Elaine ..... Drlg. rock 1,930 ft.
The Texas Company's No. 1 La. L. & E. Co., Dog Lake .. Abandoned in salt 1,732 ft.
The Texas Company's No. 2 La. L. & E. Co., Dog Lake .. Rig.
The Texas Company's No. 2 La. L. & E. Co., Four Isle .. Drlg. rock 4,618 ft.
The Texas Company's No. 1 State—Bay Junop ..... Fishing drill stem; total depth in shale 4,700 ft.
The Texas Company's No. 3 State—Lake Pelto ..... Driving piling.
The Texas Company's No. 2 State—Caillou Island ..... Rig.

CANADIAN FIELDS

(Continued from Page 60)

and No. 2 at 3,891 feet are logging higher than Northwest-Associated's No. 1 which got the lime at 5,188 feet.

Central Turner Valley

Production of McLeod's Nos. 3 and 4 is reported to have increased to 240 bbls. a day. Okalta Oils' No. 2, LSD 8, Section 1-20-3w5, is reported at 3,605 feet with a swabbing production of around 100 bbls. a day of light crude. Okalta's No. 3, LSD 9, is at 2,760 feet, swabbing and drilling with a fair light crude production. Vulcan Oils' No. 1, LSD 11, Section 13-20-3w5, is sidetracking lost tools within 15 feet of the bottom. One set of tools was lost when the well got production in the deep lime and a second set in fishing for the first, and the hole is being cleaned to restore production.

North Turner Valley

In the North Turner Valley, interest centers in Outwest Petroleums' No. 1, LSD 5, Section 35-19-3w5, on the subsidiary Black Diamond structure. It encountered a fault at 3,400 feet. The test is now being deepened while several other outfits in are shut down pending the outcome. Some experts claim an overthrust of the Edmonton formation where the Kootenay was expected, which might indicate the lime is beyond reach of the drill; while others think the drill is actually in the Fernie shales with the Kootenays entirely absent from the sequence, which would bring the lime within easy reach.

Waite Valley Structure

On the Waite Valley structure, Anglo-Pacific Oils' No. 1, LSD 4, Section 27-19-3w5, has spudded in and is drilling with 21-inch bit. Bonanza Oils' No. 1, LSD 4, Section 14-19-3w5, is building derrick.

Hudson's Bay Oil & Gas Co.'s No. 1 Highwood, Section 8-19-3w5, recently got shallow gas production estimated around 1,000,000 feet a day.

On the Moose Dome, Moose Oils' No. 1, LSD 16, Section 29-22-6w5, is drilling in about 410 feet in the upper Devonian lime at 960 feet. A second gas strike occurred in the Devonian at this depth; a previous gas flow, estimated at 500,000 feet a day, was met in the lower Madison lime at 500 feet. Commercial production is looked for in the lower Devonian, and the drill is expected to get the top of this formation in 1,500 feet, though production may not be reached short of 2,500 feet.

On the Ghost River structure, J. Curtiss Watson and associates of Vancouver have secured around 15,000 acres in addition to the 8,000 acres already held by Ghost Valley Holding Co., of which Mr. Watson is a director. The Watson syndicate has made tentative location for its No. 1 test in Section 6-28-6w5. The location is on the upper or northern part of the structure, about 7 miles north of the Baymar and Atlantic-Keystone tests.

Border Fields

In the Red Coulee Field, west of Coutts, Vanalta Oils' No. 1, Section 4-1-16w4, is running packer to separate the oil and gas sands, and increase crude oil production. Full production is now estimated around 100 bbls. Vanalta Oils' No. 2, same section, 440 feet west of No. 1, had derrick finished. Alberta Pacific Consolidated Oils, Ltd., of Calgary, is reported arranging to drill on acreage not included in the sublease to Vanalta Oils, Ltd. D. A. McDonald and associates are rigging up for a test 400 feet south of Vanalta's No. 1 producer, to spud in this month; B. C. Herd will be field superintendent.

In the Milk River area, Dalco Oil & Gas Co. has been organized at Calgary

to drill three commercial tests on acreage previously core drilled and geologized by the Canadian Western Natural Gas, Light, Heat & Power Co. of Calgary. The acreage is in Townships 2, 3 and 4, Ranges 16, 17 and 18, with several blocks extending southeasterly to a point close to the Red Coulee Field. The company is headed by J. C. Dallas of Calgary and will be largely financed by English capital. Drilling equipment has already been ordered and one or more of the tests will spud in this fall. The Canadian Western company will, it is understood, take any gas production secured.

In the Foremost district, Bugle Oils' No. 1, LSD 12, Section 14-23-11w4, is reported rigging up 10 miles south and 2 miles east of Foremost. W. J. McCarroll of Winnipeg is managing director.

Hudson's Bay Oil & Gas Co.'s No. 1 Champion, LSD 2, Section 9-16-23w4, has resumed drilling around 2,800 feet. Hudson's Bay's No. 1 Lomond, Section 23-17-18w4, has been abandoned and the rig skidded for a new start.

In the Oyen district, Fuego Oils' No. 1, Section 34-25-4w4, is cementing to overcome water intrusion. In cleaning out, some 1,000 feet of oil and water was bailed, when the well started to flow by heads. The oil flow has increased to around 45 to 50 bbls. a day, coming with the water; this production comes from the first sand at 3,126 feet, the lower sand at 3,163 feet having been plugged off. After cementing, the hole will be deepened. Storage tanks with around 1,000 bbls. capacity are being secured, and derrick materials for Fuego's No. 2 ordered.

East Central Alberta

In the Wainwright Field, East Central Alberta, Edalta Oils' No. 1, LSD 15, Section 19-45-6w4, has cemented casing on top of a good looking oil sand which has been cored to 2,185 feet. Production will be tested in about a week. Beaumont Oils' No. 2, LSD 10, Section 30-45-7w4, is drilling additional water wells before spudding in its test for oil. Blair & Stevens' No. 1, Section 12-47-7w4, is reported installing rotary equipment. Oil Selections' No. 1, LSD 13, Section 2-46-7w4, has derrick complete. Hargal Oils' No. 4 B. P., LSD 13, Section 30-45-6w4, which got shows of oil and gas at 2,073 feet is rigging up to deepen to around 2,260 feet. Wainwell Oils' No. 1, LSD 9, Section 36-44-7w4, has cemented back to 2,215 feet for production test. Wainwell's No. 3, same LSD, which got a show of oil and gas around 2,072 feet, will likely be deepened.

Bethwain Oils' No. 1, Section 6-45-6w4, is in the lime at 2,485 feet and rigging up with cable tools for deeper drilling. Bethwain's No. 2, Section 4-45-6w4, is rigging up. Sasko-Wainwright Oil & Gas Co.'s No. 2, LSD 1, Section 19-45-6w4, has derrick up. Senator Oils' No. 1, Section 23-44-6w4, has derrick up.

Fabyan Petroleums' No. 1, LSD 8, Section 24-45-8w4, is at 1,838 feet and preparing to further test oil indications. Fabyan Petroleums' No. 3, LSD 16, Section 18-45-7w4, offsetting No. 2 "mystery" well, has derrick erected.

Daugherty Petroleums' No. 1, LSD 4, Section 28-4-6w4, has derrick finished. Palmer Oils' No. 1, LSD 14, Section 18-44-2w4, has derrick up.

On the Ribstone structure, there is considerable drilling activity. Meridian Oils' No. 1 LSD 3, Section 16-45-1w4, is unofficially reported maintaining a steady production of around 100 bbls. Meridian Oils is spudding in Imperial Oils' No. 2, same section. Oxville Oil, Gas & Development Co.'s No. 1, LSD 14, Section 14-45-2w4, is drilling below 500 feet. A small pocket of oil was struck at 387 feet.

Ontario Fields

In Dover Township, Kent County, Ontario, Ajax Oil & Gas Co.'s No. 6 is drilling around 1,670 feet. Olga Oil & Gas Co.'s Nos. 1 and 2 are drilling.

In Halton County, near Milton, a test by the Burlington Oil Co. on the Macklin farm is reported down 1,050 feet and setting 6¼-inch casing. Traces of gas were met at 300 and 360 feet and a small production, estimated 60,000 feet a day, was struck at 500 feet. Drilling will be carried through the Trenton limestone. The acreage is in Nelson Township, where the Trenton Oil & Gas Co. of Toronto has also leased territory and is preparing to drill.

SOUTHWEST TEXAS

(Continued from Page 54)

feet to NW and SW lines, drilling at 2,207 feet, top chalk 2,197 feet, core showed oil, setting pipe at 2,200 feet; Magnolia Petroleum Co.'s No. 1 C. Zedler, James Hodges-League Survey, 150 feet to NW and NE lines of 100-acre tract, one-half mile south from Magnolia No. 1 Appling (correction), derrick. Mundine Investment Co.'s No. 1 L. V. Echols, James Hodges Survey. In 11-acre tract out of south point of L. V. Echols tract, 150 feet to NW and SW lines of tract, 3,650 feet to southwest, 4,200 feet to northwest lines of survey, drilling at 1,642 feet. The Texas Company's No. 2 Dallas Wilson, J. C. Darst Survey, 150 feet to south and west lines, derrick; The Texas Company's No. 2 L. Anderson, Jacob Darst Survey, 150 feet to north and east lines, shut down at 685 feet; The Texas Company's No. 3 L. Anderson, Jacob Darst Survey, 150 feet to north and west lines, location (corrected).

Darst Field—Guadalupe County

The Texas Company's No. 4 Lemmie Anderson, J. C. Darst Survey, 150 feet to north and west lines of farm, derrick.

Kingsville Pool—Kleberg County

Mumble Oil & Refining Co.'s No. 8 R. J. Kleberg, Lot 7, Section 40, K.T.&I. Survey, 150 feet south and east lines of lot, location.

Cartwright Pool—Live Oak County

Houston Oil Co.'s No. 2 J. B. Dunning, M. B. Kilvin Survey, 1,445 feet north of No. 1, in sand showing gas at 2,088 feet; set 8¼-inch casing at 2,081 feet. Waiting on cement. Sand at 1,546 feet tested dry.

Nueces County—Agua Dulce Field

Agua Dulce Oil & Gas Co.'s No. 1 Ollie Purl, 450 feet from south and west lines of north half Section 6, Ross Peters subdivision, rigging up.

White Point Field—Patricio County

Spencer & Rhodes' No. 2 Texas Company fee, Lot 6 Roos subdivision, 150 feet to south and west lines of west 50 acres, derrick partly built, standing.

Nursery—Victoria County

Humble Oil & Refining Co.'s No. 3-A Jay J. Welder, D.L.&C. Survey, 1,634 feet southeast lines, 736 feet southwest lines, 1½ miles northeast from Nursery, drilling in shale at 5,865 feet.

Humble Pool—Duval County

Humble Oil & Refining Co.'s No. 35 Kohler, Survey 165, 330 feet south and east lines, drilling at 660 feet.

Kohler Pool—Duval County

Humble Oil & Refining Co.'s No. 37 Kohler, Survey 144, 330 feet to north line, 495 feet to east line, derrick. E. H. Buckner's No. 1 Peters, Survey 162, 495 feet south line and west line, set 10-inch surface casing at 60 feet; waiting on cement.

Schoolfield-O'Byrne—Duval County

Magnolia Petroleum Co.'s No. 2 Lundell, Survey 60, 150 feet north and east lines of southeast of survey, rigging up. Onyx Petroleum Co.'s No. 5 Krauter, Block 20, Survey 250, 150 feet south and east lines of block, location. G. M. Partee's No. 6 Moody, Survey 60, 510 feet north line, 150 feet west line, in sand at 2,355-61 feet. Trapshooter Reilly's No. 2 Hahl, Block 27, Survey 250, 1,050 feet east line, 150 feet north line, drilling at 2,000 feet. S. & O. Oil Co.'s No. 7 Hahl, Survey 250, 450 feet south line, 150 feet west line, drilling at 2,100 feet; S. & O. Oil Co.'s No. 9 Hahl, Block 22, Survey 250, 450 feet north line, 150 feet west line, location.

Randado Pool—Jim Hogg County

Randado Oil Corp.'s No. 35 Palacious, Block 2, Survey 291, 150 feet south line, 450 feet east line, standing at 100 feet. Magnolia Petroleum Co.'s No. 1 N. Hinnant, Block 1, Survey 20, 600 feet north and west lines, drilling at 2,454 feet. Magnolia Petroleum Co.'s No. 1 Weil, Block 2, Survey 5, 660 feet north line, 349 feet east line, location.

Henne, Winch Fariss—Jim Hogg County

George S. Marshall's No. 4 Holbein, Block 10, Survey 11, Share 3, 150 feet south and west lines, derrick up. George S. Marshall's No. 5 Holbein, Block 10, Survey 15, Share 3, 150 feet north and west lines, rigging up. O. W. Killam's No. 1 J. G. Martinez, Survey 2, 550 feet west line, 150 feet south line of southeast of Survey, derrick.

Schott Field—Webb County

Livingston & Payne's No. 1 Guerra-Ochoa, Survey 58, 1,371 feet east line, 470 feet south line, testing at 1,620 feet.

Mid-Ojuelos Field—Webb County

Crown Petroleum Co.'s No. 2 E. Garcia, Block 2, Survey 463, 1,300 feet east line, 3,350 feet south line, standing at 2,630 feet.

Albercas Pool—Webb County

Rycade Oil Corp.'s No. 10 Yeager-Strohman, Share 5, Las Animas Grant Survey, 150 feet to south line, 200 feet to east line of Rycade's 631.8 acres, total depth 2,143-49 feet, set casing at 2,140 feet, waiting on cement.

Carolina-Texas—Webb County

W. R. Shankle's No. 2 Webster, Survey 684, 1,170 feet west line, 150 feet south line, rigging up.

Magnolia-Cole Pool—Webb County

Cole Petroleum Co.'s No. 67 Benavides, Block 4, Survey 412, 313 feet east line, 160 feet north line, standing at 38 feet. Houston Oil Co.'s No. 1-H R. Benavides, B.S.&F. Survey No. 701, 546 feet from north line, 150 feet from west line, location; Houston Oil Co.'s No. 20-D R. Benavides, Survey 753, 600 feet north of No. 19, location. Magnolia Petroleum Co.'s No. 1 J. G. Valdez, Block 15, Survey 754, 150 feet south and west lines, derrick; Magnolia Petroleum Co.'s No. 2 J. C. Valdez, Block 2, Survey 754, 330 feet to north line of Block 2, 660 feet to east line of Block 2, testing at 2,310 feet; Magnolia Petroleum Co.'s No. 1 D. Benavides, Block 14, Survey 694, 660 feet to east and south lines, location.

Cole Gas Field—Webb County

Magnolia Petroleum Co.'s No. 1 S. Perez, J. Poitevent Survey 460, 1,980 feet north line, 660 feet west line, drilling at 50 feet; Magnolia Petroleum Co.'s No. 2 King-Harper, Block 2, Survey 323, 660 feet north and east lines, location. Houston Oil Co.'s No. 1-H R. Benavides, Survey 701, 666.2 feet south line, 666.3 feet east line, derrick; number changed from G-2. Houston Oil Co.'s No. 20-D Benavides, Block 5, Survey 753, 566 feet north line, 666 feet east line, drilling at 1,000 feet. John J. O'Hern's No. 2 Valdez, SW NE Survey 754, 663 feet north line, 667 feet east line, drilling at 1,600 feet. O. W. Killam's No. 13 Bruni, Survey 3, Adams subdivision, Bruni lands, Mariano Arispe grant, 491 feet SW line, 208 feet SE line Block 1, drilling at 2,814 feet; O. W. Killam's No. 14 Bruni, Survey 5 Adams subdivision, Bruni lands, Mariano Arispe grant, 150 feet NW line, 150 feet SW line, Block 11, derrick.

Charco Redondo—Zapata County

Loyal Oil Co.'s No. 17 J. G. Martinez, C. Redondo Survey, 600 feet northeast of No. 10, location; Loyal Oil Co.'s No. 18 J. G. Martinez, C. Redondo Survey, 300 feet northwest of No. 17, location; Loyal Oil Co.'s No. 19, J. G. Martinez, C. Redondo Survey, 300 feet north of No. 15, location.

Jennings Pool—Zapata County

Blair & Acklin's No. 2 Trevino, Block 1, Survey 66, 150 feet west line, 200 feet north line, drilling at 725 feet, showed oil at 600 to 607 feet. Blankenship and others' No. 1 Trevino, Survey 413, 2,480 feet south and east lines, location. R. F. Blankenship's No. 1 Garza, Block 13, Survey 413, 160 feet north and east lines, drilling at 1,500 feet. O. W. Killam's No. 1 Flores, Survey 240, 850 feet SE lines, 560 feet NE lines, drilling at 1,260 feet; O. W. Killam's No. 2 Flores, Survey 250 and south of Survey 110, 1,565 feet east line, 150 feet north line, drilling at 1,838 feet. Killam-Duggan's No. 9 Cuellar, Survey 277, 3,040 feet east line, 310 feet south line, drilling at 1,300 feet; O. W. Killam's No. 17 Cuellar, 160-A Cuellar tract out of 1,722-A Cerrito Blanco Grant, derrick. South Texas Production Co.'s No. 1 Roy Jennings, Mira Flores Grant Survey, 18,055 feet SW lines, 11,040 feet SE lines, also 4,236 feet south, 63 degrees west of No. 4, drilling at 3,280 feet; South Texas Production Co.'s No. 2 Roy Jennings, Cerrito Blanco Grant, 13,000 feet to NW line, 9,800 feet to SW line, drilling at 300 feet; South Texas Production Co.'s No. 6 Joe Jennings, Cerrito Blanco Grant Survey, 2,640 feet to SE line, 660 feet to NE line, drilling at 700 feet.

Pettus Field

In the Pettus Field in Bee and Goliad Counties the Mission Drilling Co. last week abandoned at 4,425 feet its No. 4 Ray located a little northwest from No. 2 Ray which is a 20,000,000-foot gas well. No. 4 Ray was a 30,000,000-foot gas well at about 2,700-50 feet but made salt water with it and was deepened. Pay in No. 2 Ray is at 2,890 feet. A new location will be made but had not been announced late in the week. The Mission Drilling Co.'s No. 3 Ray, located 3 miles to the east and in Goliad County, late in the week was swabbing at 4,036 feet, after plugging back from 6,060 feet. It was at 4,036 feet that the well got a considerable showing of gas and oil when first drilled and several days were spent trying to complete at that depth. It gauged when that depth was first reached 5,000,000 feet of gas and a light spray of high gravity oil.

F. P. Zoch's No. 1 Kauffman in Goliad County has pulled the liner and screen and is deepening. It is a little east of the Mission Drilling Co.'s No. 3 Ray. Zoch got a lot of gas at 2,938 feet. At about 3,006 feet it tested salt water and is continuing to deepen.

Brooks County

While the Darst Creek Field will continue for some time to get the bulk of the publicity the area in Brooks County around the Houston Oil Co.'s No. 1 Lasater which came in at 4,115 feet making about 40,000,000 feet of wet gas is getting the quiet play of a bunch of major companies and independent operators. The Houston Oil Co.'s No. 1 Lasater is wet gas and a big well. Shell Petroleum Corp. recently sent 30 automobiles which were unloaded at Hebbronville in Jim Hogg County and a car load of dynamite which will be used in "shooting" Brooks County all over again, this being the second time for that company in that area. Shell has a big block of leases lying to the south from No. 1 Lasater in addition to the block on which the Lasater test was drilled by the Houston Oil Co., it having taken the gas lease only on the block.

Houston Oil Co. is now down a few hundred feet in No. 1 Holbien-Wormser, 660 feet south of No. 1 Lasater and 330 feet from the north line and 6,540 feet from the east line of the Holbien-Wormser land.

This area all north and south through Brooks County and the eastern half of Jim Hogg County has attracted a lot of outside attention and big blocks of leases have been purchased and it is due for great activity though it has not yet got into the news columns much. In the southeast corner of Jim Hogg County and approximately 30 miles nearly due south from the Houston Oil Co.'s No. 1 Lasater, the Deep Rock Oil Co.'s No. 1 Kelsey had quite a little showing of gas at around 2,450 feet recently but not enough for a well.

W. G. French is making the last core test on the big block in southwestern Brooks County, a little east of the Deep Rock gas showing. French will next make a location based on the eight formation tests and drill deep.

Wildcat Operations

Important wildcat developments are the Grayburg Oil Co.'s No. 1 Wells in the eastern edge of Guadalupe County and several miles southeast of the discovery well of the Darst Creek Field, which got the top of the chalk at 3,395 feet which it is calculated is very much below normal indicating it is on the downthrow side of the fault. Late last week at 3,608 feet it was shut down to repair the rig and was still in chalk. While

hitting the chalk low may not be as good as hitting it high yet in this faulted country it proves the existence of the fault and the next selection by the geologist will get it at the proper place on the upthrow side of the fault.

T. H. Poole's No. 1 Behring, several miles west of the Darst Creek Field, reported a few weeks ago with a showing of oil in the Edwards lime tested sulphur water with the showing of oil with the top of the Edwards at 2,350 feet and elevation 443 feet and is drilling deeper. Total depth when it tested was 2,356 feet.

Northeast from the Grayburg's No. 1 Wells in Guadalupe and 4 miles east of the Darst Creek discovery well, A. G. Keiffer connected a new boiler last week and got the tools back on the bottom of the hole in No. 1 Dix at 2,693 feet and will continue to drill to the Edwards. This test developed a lot of gas at around 1,450 feet some few months ago and created considerable excitement as the Darst Creek Field had then just been discovered.

Balcones Fault

Several streaks paralleling the Balcones fault are getting considerable attention with a few tests drilling along each line. United North & South Development has started No. 1 Preston, 12 miles south of Gonzales in Gonzales County. Covering a strip about 6 miles wide along the SE side of Gonzales County there are more than a dozen blocks of leases ready for operations. Northeast of the North & South company's location Adams & Lyles are shut down at 800 feet in No. 1 Reed. Farther northeast Cranfill & Reynolds are in shale at 2,350 feet in No. 1 Lang in the James Ridney Survey, and Marshall & Moore are rigged up to carry their old No. 1 St. Clair deeper. The North & South company's block of leases is off the north side of a bigger block assembled a few years ago by Martin Oil & Gas Co., and at the northeast end of the block Dunning & Pierce have a block with a location ready to drill; Sun Oil Co. has a block adjoining that, and Martin Oil & Gas Co. has assembled a second block north of that taken by the United North & South company.

Shell has a big block between the Cranfill & Reynolds No. 1 Lang and the Adams & Lyles location, and the Cranfill & Reynolds block stretches out about 9 miles, reaching to the NE cor. of the county.

On the northwest side of the county there is another strip of activity, and United North & South has made a location for a test in the Joseph Bowman Survey, 11 miles west of Waelder.

Around Waelder there is more activity. Linderman Brothers lost No. 1 Frampton a couple of miles northwest of Waelder at about 2,000 feet and are skidding the rig. Joseph Bruner, of the Bruner Field at Luling, has resumed drilling in his No. 1 Miller and is down 3,300 feet and coring Taylor marl.

Western Wilson

Tidal Oil Co. is drilling a water well preparatory to spudding in No. 1 Felix Kulesza in the NW cor. of Wilson County, and a little northeast of it location is announced for No. 1 Hice near the Cibolo River for the Rycade Oil Corp., with the Rosita Oil Corp. and C. O. Maddox holding interests. A little west in Bexar County, Empire Gas & Fuel Co. has taken a considerable block of acreage, 9 miles east and 2 miles south of San Antonio.

This line of play across the NW cor. of Wilson County extends northeast into Guadalupe County and southwest into Bexar and across the NW cor. of Atascosa and into Frio County. The farthest west new location on this line of play is the Frank B. Lefevre location, near the center of the north line of Frio County on the H. W. and R. L. Eschenburg farm. This line of play follows the outcrop of the Carrizo sandstone and the northeast end of it is the Darst Creek Field, 90 miles from the Lefevre location.

Moore and associates of Fort Worth are closing a deal for a block of acreage in the northwestern part of Atascosa County along this line of play, and Donaldson Oil Development Co. announced last week location for a test on the Adams company land 2 miles southwest of Devine on the same line. C. O. Maddox has several blocks of acreage along that line. There are a number of other blocks across the southern part of Bexar County that have been mentioned in earlier issues of The Oil and Gas Journal.

It looks now very much as though this line of play, which is several miles southeast from the Luling Field play, is to get ultimately quite as much drilling activity as the old Luling Field line. When the Luling Field was at its height there were as many as 60 rigs running in a belt of country a few miles wide and about 75 to 80 miles long.

With the lease blocks taken and drilling obligations there is everything to confirm the prediction that wildcatting in the San Antonio area is not going to grow any less for many months to come. In addition Southwest Texas has a considerable wildcat play on in the Laredo territory, more still in the Brooks County district, still more in the Pettus area in Bee County and stretching northeast from that, with other scattered wildcat activity elsewhere.

MICHIGAN FIELDS

(Continued from Page 62)

of Grand Rapids, will deepen No. 1 E. Bragg, SW NE, Section 15-10-16.

New Locations

Only one new location was announced for Muskegon, L. E. Kennedey and others' No. 5 Charles I. Giles, NW NE SE, Section 6-10-16. Joseph A. Mesiroff and others have spudded in No. 1 Velo Houle, SW SW SW, Section 2-10-16, east of the proven field in semiwildcat territory.

Three new Mount Pleasant locations were: Sias Oil Development Co.'s No. 1 Frank Muma, SW SW NW, Section 2-14n-3w, Chippewa Township, Isabella County; Chippewa Oil & Gas Co.'s No. 6 Joslin, NW SW, Section 12-14-3, and No. 7 Joslin, SE SW, Section 12-14-3, both in Chippewa Township, Isabella County.

Four new wildcats will be drilled in Alpena, Cass, Jackson and Monroe Counties. Walter McLaren's No. 1 Wright, SE SE, Section 18-5s-14w, Volinia Township, Cass County, is in the southwestern corner of the State. The Exploration Co.'s No. 1 Thomas Wilson, NE NE, Section 7-32n-6e, Long Rapids Township, Alpena County, is in the northeastern corner of the lower peninsula of Michigan. The Hanover Development Co.'s No. 1 Folks, SW SW, Section 14-4s-2w, Hanover Township, Jackson County, is the first in that county and is near the center of the southern boundary of Michigan. William J. Norris, trustee's No. 1 LaPointe and Dusseau, NE NW NW, Section 19-6s-6e, is in Monroe County near the southeastern corner of the State.

Three old wells, the first drilled seven years ago, are producing an aggregate of about 15 to 20 bbls. a day in the Trenton limestone in Monroe County. Crude from these Trenton wells is of exceptionally high grade being valued at more than $3 a barrel. It resembles some West Virginia crude. The wells are about 2,100 feet deep and had shows of gas above the Trenton. The first well drilled seven years ago is pumping 6 or 7 bbls. a day.

Ottawa County

Drilling was resumed on the Wright Oil Co.'s No. 1 Joseph Kluting, SW NW, Section 10-8-13, Wright Township, Ottawa County, and it had reached about 4,700 feet after a slight show of oil in the lime at 4,670 ft.

The Michigan Petroleum Co.'s No. 1 C. E. Moe, SE SE, Section 6-9-13, Chester Township, Ottawa County, 2 miles east of Ravenna, is reported drilling at about 4,500 feet after having a show of gas at about 4,300 feet.

The rig has been moved from the other deep test in Ottawa County for a new wildcat in Cass County. The Ottawa County well is Royal R. Miller's No. 1 Paul Sako, NE NW, Section 27-7-16, Grand Haven Township.

The rig belongs to V. M. Voorhees, contractor, who has moved it south to drill Blair and Miller's No. 1 Charles Stuttsman, NW NE NW, Section 32-7s-13w, Porter Township, Cass County.

Deep Test at Muskegon

The first deep test on structure in the Muskegon Field will be started on or before December 1 by the Eureka Gas & Oil Co., of Muskegon, it was announced by Wilfred N. Fortier, president. The well will be on the H. Hewitt and H. Buteau community lease, in the SE NE, Section 12-10-17, Laketon Township. A number of the largest operators in the field have agreed to contribute dry hole money for the test which will be drilled to a maximum of 4,000 feet or less if commercial production is encountered.

GULF COAST FIELDS

(Continued from Page 58)

Hackberry Dome, after being deepened from 3,964 feet to 4,323 feet, was swabbed in for an estimated 600 bbls. daily at 4,323 feet.

Other completions were Yount Lee Oil Co.'s No. 85 McFaddin, a workover, at Spindletop, flowing 750 bbls., 2,592 feet; Yount Lee Oil Co.'s No. 116 McFaddin, Spindletop, flowing 1,000 bbls. at 4,804 feet; Gulf Production Co.'s No. 56 Phoenix, a workover, Hull, flowing 125 bbls. fluid, 10 per cent water, 3,469 feet; Humble Oil & Refining Co.'s No. 8 Brazos, DeWalt, flowing 113 bbls. first day at 3,674 feet; same company's No. 1 Hagenson, DeWalt, pumping 75 bbls. fluid, 30 per cent water, 3,811 feet, and Gulf Refining Co.'s No. 1 J. W. Gardner, Vinton, pumping 130 bbls. of oil, 3,228 feet.

Deep Tests

Gulf Production Co. has abandoned a deep wildcat at Orchard, Fort Bend County. This was its No. 19 Moore, which had drill stem stuck at 6,419 feet. This was the deepest hole ever drilled at that dome, being on the south side and to the south of No. 18 Moore, a wildcat producer. Gulf also has another deep wildcat of interest in Fort Bend County, this being No. 12 Trone at Long Point which is in heaving shale at 6,314 feet, the deepest level ever reached there.

Vacuum Oil Co. has abandoned its No. 1 Herbert-Broussard in the T.&N.O. Survey No. 208, Jefferson County, quitting the hole with drill stem stuck at 5,673 feet. This is a rank wildcat, being the first test drilled on what had been checked geophysically as a dome. Gulf Production Co. has quit its No. 17 Luscher at Blue Ridge, the bottom of the hole being 4,219 feet in salt.

KANSAS FIELDS

(Continued from Page 52)

at 2,315 feet after plugging back from 2,520 feet.

Marion County

Empire Oil & Refining Co.'s No. 1 Reizmig, NE cor. NW NW, Section 34-20-2, is a dry hole at 3,101 feet.

McPherson County

Darby Petroleum Corp. made location for No. 1 McPherson College, NW cor. SE SW, Section 13-20-2w.

Rice County

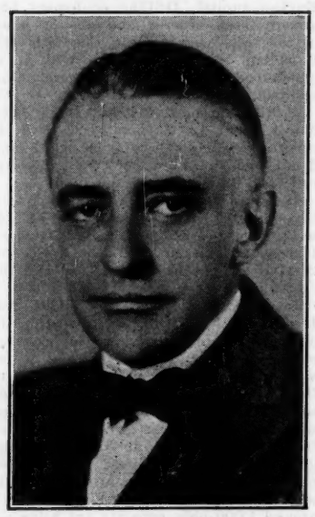
G. C. McBride made location for No. 1 Green, C NW, Section 33-19-6w. Derby Oil Co.'s No. 1-A Johnson, NE cor. NW NE SE, Section 24-20-6w, is rigging up. No. 1 Johnson, NW cor. NE SE, Section 24-20-6w, has been abandoned at 2,240 feet.

Sedgwick County

The Prairie Oil & Gas Co. moved the rig in for No. 1 Smyser, SE cor. SW SW, Section 36-25-1w. Wentz Oil Corp. has the rig up for No. 6 Bright, NE cor. NW, Section 1-26-1w. Shell Petroleum Corp. staked location for No. 1 Morris, SE cor., Section 10-26-2. No. 2 Lygrisse, NE cor., Section 15-26-2, is rigging up. E. R. Hawkins and others' No. 1 Dix, C SW, Section 4-25-2w, is dry and abandoned at 4,010 feet. Shell Petroleum Corp.'s No. 3 Brown, NE cor. SE SW, Section 15-26-2, made 1,200 bbls. in chat 2,889-93 feet.

C. R. MINOR PRESIDENT LOUISIANA DIVISION

SHREVEPORT, La., Nov. 9.—Members of the Louisiana-Arkansas division of the Mid-Continent Oil & Gas Association elected C. R. Minor as president for the ensuing year. Mr. Minor is vice president of the Gulf Refining Co. He



C. R. Minor

succeeds M. J. Grogan, vice president of the Louisiana Oil Refining Corp., who served two years as president.

Other officers elected were: First vice president, F. Ray McGrew, Standard Oil Pipe Line Co.; vice president, J. R. Crawford, Lake Charles; treasurer, Ben Johnson, Shreveport, re-elected; secretary, Joseph B. Elam, Shreveport, re-elected.

Due to the small average production of wells—only 15 bbls.—independent operators face a bleak future in Louisiana, according to the annual report of Secretary Elam. As the tax on production in Louisiana is more than twice as great as in the other southwestern states, he said, development will be desultory except in the coastal regions, where geophysical and seismographic surveys are being made.

ROBERTS-SETTLES POOL RUNS

E. E. Andrews, proration umpire, has issued the following statement showing number of wells and runs from each company in the Roberts-Settles Pool to November 1:

Company—	No. of wells	Total
Amerada Pet. Co.	8	779,640
American Maracaibo	8	969,853
California Co.	2	209,514
Cosden & Co.	6	349,678
Cranfill & Reynolds	1	42,143
Continental Oil Co.	12	933,074
Howard County Oil Corp.	2	281,314
Humble Oil & Ref. Co.	3	170,772
Kirby Oil Co.	2	10,938
Louisiana Oil & Ref. Co.	2	269,443
Lyons Oil & Ref. Co.	1	21,606
Magnolia Pet. Co.	15	1,319,582
Merrick & Bristow Co.	4	841,202
Moody (Superior)	21	1,578,716
Owen-Sloan & Cosden	7	1,369,028
Plymouth Oil Co.	4	413,753
Pure Oil Co.	1	2,607
Schermerhorn Oil Co.	11	1,165,316
Shell Oil Corp.	5	279,111
E. L. Smith Oil Co.	1	816
Sprague Oil Co.	3	222,620
Sun Oil Co.	5	900,381
Taylor-Link Co.	2	67,200
Ward Oil Co.	3	315,735
Witherspoon & Glasscock Co.	2	125,302
Total	131	12,678,318

W. Y. BEDAL DIES

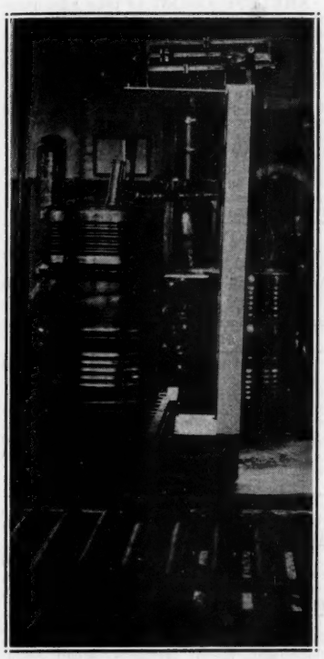
CHATHAM, Ontario, Nov. 9.—William Youngs Bedal, aged 83, pioneer Canadian driller, died recently at Coplesston, Ontario. He came to Petrolia as a young man and learned the drilling trade, working on some of the first Petrolia wells. He spent four years in Australia and one in Trinidad. Four sons and two daughters survive, William A. Bedal of Tulsa being a son.

Practical Suggestions in Refining

By W. T. Ziegenhain

ROLLER CONVEYOR SYSTEM CUTS COMPOUNDING LABOR

Considerable labor is saved in the compound house of the Ponca City, Okla., plant of the Empire Oil & Refining Co. by the installation of roller conveyors. Below is shown a section of this conveyor system, branches of this system accomodating all parts of the compound house. A slight push on the barrel is enough to move it and several may be



easily moved at a time. The unique feature of the installation is the manner of handling the drums at the point of filling. A section of the conveyor system has been mounted on the floor of a scales and counterbalanced by adjusting the scales. This roller section is independent of the rest of the system so there is no interference in weighing. It connects with the system, however, there being only a fraction of an inch space between the two sections when the scale floor is forced down after the barrel is filled.

The filling device also shown in the picture here is standard and in general use but is particularly convenient at the Empire refinery. The empty barrel is raised to the conveyor and set in place on the scales. By knowing the gravity of the oil to be loaded and the capacity of the barrel, it is an easy matter to predetermine the weight of the drum when filled. The scale arm is counterbalanced to tip at the predetermined load and as filling progresses the arm of the filling device is supported independent of the drum itself.

A flexible joint permits the filling arm to be raised when the barrel is filled. Filling stops when the load is sufficient to tip the scales, the movement of the scales actuating a shut off valve on the loading line. The filled barrel is closed and pushed off the roller section on the scales on to the main line and is ready for loading.

The company has considered lowering the roller sections into the floor to eliminate the need of lifting the empty drums and except for the fact the present method permits them to move the roller sections from one location to another at a very small cost, the recessed method of installation is preferred.

PADDLE MIXING DEVICE USED FOR ACID TREATING DUBBS DISTILLATE

Thorough mixing of the acid and pressure distillate from the Dubbs units is secured at the West Tulsa refinery of the Producers & Refiners Corp. by means of a series of motor-driven paddles in a long horizontal drum. A picture of the equipment is shown below. While similar mixers have been used at other plants, according to J. A. Sartori, general superintendent, it is apparent a number of details were left to be satisfactorily worked out at the Producers & Refiners Corp. plant in order to tie it into the operation there.

The drum of the mixer is a 10-foot piece of 20-inch pipe. In this case, the pipe was cut in half along its length and 1-inch strips were welded along the edges to form a flange so the two halves could be bolted together. This was done to facilitate cleaning and the replacement of corroded parts inside the drum but the very small amount of corrosion that takes place and the ease with which the paddles may be removed from the ends of the drum makes the splitting of the pipe essential only for assembling. Flanges are also welded to the round ends of the drum to take the end plates, all joints being kept tight with rubber composition gaskets.

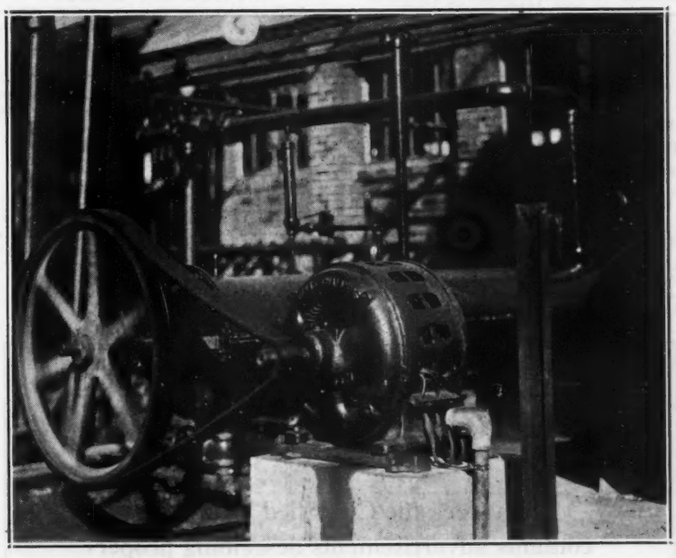
The end plates were centered and drilled to take a 3-inch shaft. Packing glands were welded in place at each end and packing material resembling a mixture of shredded lead, plumbago, graphite and pulverized mica was found to be most satisfactory in use.

The bearings for the shaft were set out from the gland about 10 inches to facilitate quick and easy repacking of the glands. Roller bearings are used and the bearing assembly built up in the usual manner. Each assembly slips into a tube section which in turn is supported in place by four one-half by 2-inch steel braces. One end of each of these braces is welded to the outside of the tube and other end is bolted in place around the edge of the end plates. This method of supporting the bearing in four directions makes the assembly sufficiently rigid to eliminate vibration with changes in the load, in addition to permitting quick and easy repacking of the glands.

The paddles on the inside of the drum are made from one-fourth inch steel plate. These paddles are rectangular and four of them are welded equidistant around 3-inch pipe nipples to form a four-blade paddle wheel. Each paddle blade is 11½ inches along the edge welded to the nipple and 7½ inches deep. The 3-inch pipe nipples are slightly longer than the 11½ inches needed for welding. A small hole was drilled through one side of the nipple at one end and a small nut welded on over the hole in order that set screws could be used to hold the paddle sections in place on the shaft.

These paddle sections are spaced about 12 inches apart along the shaft and stationary blades or paddles are welded to the inside of the 20-inch pipe and are spaced alternately with respect to the moving paddles throughout the length of the drum. These paddles are the same sizes as the moving paddles. Four of these stationary paddles are welded to the pipe equidistant apart to form each section. The stationary paddles break up the tendency for the acid and pressure distillate to swirl which in turn would tend to cause the acid to separate out by centrifugal force.

A 25-horsepower induction motor is used to drive the paddles. The motor revolves at approximately 1,500 r.p.m. Power is supplied by the drive wheel through a linkbelt chain, the diameters of the drive wheel and the pulley wheel on the motor being chosen to drive the paddles at about 150 r.p.m.



Mixing device used at the Producers & Refiners Corp.'s plant in West Tulsa to acid treat Dubbs pressure distillate.

Operation of Mixer

The operation of the mixer is almost selfevident except that a mixitt valve is used in conjunction with this device. It is located on the ground behind the drum and is used to first properly proportion the amount of acid and pressure distillate. Approximately 3½ pounds of 85 to 96 per cent sulphuric acid are used per barrel of distillate treated. Over a 24-hour period approximately 3,000 bbls. of distillate are treated, or 125 bbls. per hour. Considerable mixing is done in the mixitt valve before the acid and distillate enter the drum, but here the two are violently mixed for a longer time. The stream from the mixitt enters the drum at the bottom on the end near the drive wheel and is discharged from the drum at the top on the opposite end. The mixture then goes to the vertical separatory tanks where the acid sludge settles out.

No trouble has been experienced through the excessive corrosion of any parts of the mixer. After several months' operation the mixer was opened and it was seen that a white scale had formed over the surface of the paddles and over the walls of the drum, which was soluble in water but apparently acted as a protective coating for the metal and was not removed. Some trouble was also noted at first in getting a packing that would hold longer than a few days, but the material now being used and described previously is now holding for several months without replacement.

Recent Patents

CRACK IN PRESENCE OF EARTH

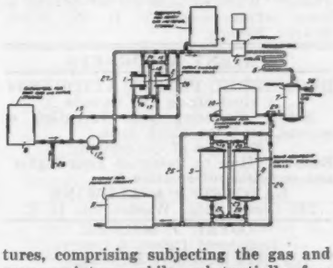
1,733,799. Art of Cracking Hydrocarbons. Eugene C. Herthel, Chicago, Ill., and Harry L. Pelzer, Highland, Ind., assignors to Sinclair Refining Co., New York, N. Y., a corporation of Maine. Filed June 11, 1927. Serial No. 198,249. 5 Claims. (Cl. 196—55.)

1. An improved method of cracking hydrocarbon oils by distillation under pressure, which comprises circulating a charge of oil in a pressure still from a bulk supply drum through heating tubes and back to the bulk supply drum and heating it to a cracking temperature in the heating tubes, taking off vapors including vapors of the cracked product from the bulk supply drum under pressure, maintaining within the charge of oil in the bulk supply drum below the normal liquid level therein and directly exposed to the oil therein a body of fuller's earth, said body of fuller's earth being arranged to permit free circulation of oil and to provide open liquid paths through the bulk supply drum from and to the heating tubes, circulating oil supplied from the heating tubes to the bulk supply drum in part directly through said body of fuller's earth and back to the heating tubes and in part through said open liquid paths and back to the heating tubes, and supplying raw oil to and discharging pitch-laden oil from the charge of oil in the pressure still during the distillation.

TREAT WITH CUPRIC CHLORIDE

1,733,800. Treatment of Casinghead Gasoline. Eugene C. Herthel, Chicago, Ill., assignor to Sinclair Refining Co., New York, N. Y., a corporation of Maine. Filed June 13, 1927. Serial No. 198,445. 4 Claims. (Cl. 196—7.)

1. The improvement in the manufacture of gasoline from gas and vapor mix-



tures, comprising subjecting the gas and vapor mixture while substantially free from water to treatment with a solid cupric chloride, and subsequently treating the gas and vapor mixture to liquefy the condensable vapors.

35 CENTS a line first insertion; 25c a line each additional insertion. Cash in advance.

CLASSIFIED WANTS

CREATE AND BUILD BUSINESS

MAIL your advertisement now. It will be published next week. Cash with order.

LEASES—PRODUCTION

FOR SALE — 2,000-acre lease with good "sweet" gas well, Panhandle Field, Texas. M.E.B., care The Oil and Gas Journal, Tulsa, Okla.

1,800 Acres Allen County, Kansas, ¾ mile 2,000,000-ft. gas well, 350 lbs. pressure. Gas line south of lease $1.50 per acre; 2,940-Acre drilling block in Woodward County, Oklahoma, for well to Wilcox sand; or will give 5 or 10 year lease. Address R. O. Zielinski, 12836 Wood St., Blue Island, Ill.

TEXAS LEASES 25 cents per acre and up in several interesting counties. Own over 75,000 acres. General Investment Company, 321 North St. Mary's Street, San Antonio, Texas.

HAVE TEN ACRE TRACTS in Fee. Leases and Royalties, west Texas oil fields. Joe Cunningham, Big Sring, Tex.

ECTOR COUNTY well came in with 150-bbl. head in 15 minutes. Leases and Royalty for sale. Anderson, Linz Bldg., Dallas, Tex.

WOOD COUNTY. Lease and royalties for sale. Get on the ground floor before prices advance. L. D. Bertillion, Mineola, Texas.

FOR SALE. By owner, 180-acre oil lease, Athens Co., Ohio. Three wells, 1 drilling; wells average 165 feet deep, Penna. Grade Oil. C. H. Byron, 800 S. Halsted Street, Chicago, Ill.

OIL LEASES AND ROYALTIES. Schleicher, Pecos, Ward and other counties. West Texas land and ranches. J. L. Ferguson, Rust Building, Box 462, San Angelo, Tex.

BLOCKED ACREAGE, 88 form, shallow field, Kansas Little cash. Drilling wanted, at once. Mean business. W. L. Morris, Garnett, Kansas.

FOR SALE—36 producing oil wells, 10 bbls. daily settled production, can be increased to 50 bbls. daily, at small additional cost. Shallow Berea sand 490 to 590 ft. deep; 50 ft. good sand. Wells flush as high as 300 bbls. At least $10.000 worth equipment. 15 undrilled acres. Price $12,000 for quick sale.
C. E. KARNS (Driller)
Claremont Avenue,
Ashland, Ohio.

ECTOR COUNTY well came in with 150-bbl. head in 15 minutes. Big play starting. Leases 5 acres or more. Royalty interests $30 and up. Anderson, Linz Bldg., Dallas, Texas.

Lea County, New Mexico.
E/2 NE/4 Sec. 24-19-36
NW/4 NE/4 Sec. 32-24-32
SW/4 NE/4 Sec. 32-24-32.
R. P. Magovern, 5326 Charlotte St., Kansas City, Mo.

CHEAP SOUTHEAST NEW MEXICO leases and royalties for sale in Lea, Eddy, Chaves and De Baca counties. Terms if desired. F. S. Blackmar, Box 541, Roswell, New Mexico.

FOR SALE OIL LANDS, LEASES AND ROYALTIES in Michigan, Oklahoma, Texas and New Mexico. Wire or write R. O. Zielinski, 12836 Wood Street, Blue Island, Ill.

I OWN 80 acres of land in San Diego County. Want to lease for oil drilling to some reliable company. D. W. Ward. Sparks, Nevada.

PATENT ATTORNEYS

REGISTERED PATENT ATTORNEYS
United States and Canada
Before disclosing your invention to anyone, send for blank form, Evidence of Conception.
Bulletin "How to Establish Your Rights and complete information free.
LANCASTER & ALLWINE
240 Ouray Bldg., Washington, D. C.

LOYAL J. MILLER
Registered Patent Attorney.
626 Insurance Building,
Oklahoma City, Okla. Phone 3-1743.

If we do not maintain a classification exactly suited to the type of advertisement you wish to run, we shall be glad to create a fitting one.

MONEY RAISING

CAPITAL — An experienced, dependable broker will aid in financing propositions of merit. Amster Leonard, East Orange, N. J.

CORPORATE ORGANIZING and promoting of meritorious enterprises, reorganizations and new financing.
The Brookworth Co., Inc.
110 East 42nd. Street
New York, N. Y.

DO YOU NEED MONEY for organizing or financing oil or mining deals? Write 2443 N. W. 12th, Oklahoma City.

FINANCE YOUR OWN project with shares bonded. Quickest, most satisfactory known method of raising capital. Information free. Bankers Interstate Security. Electric Bldg., Denver, Colo.

CAPITAL SEEKERS
Will endeavor placing proposition of merit on underwriting basis. Box 44, Room 407, 26 Court Street, Brooklyn, N. Y.

BULLETIN, containing information of priceless value to responsible parties seeking capital, yours upon request. Free analysis and advice cheerfully given. Moderate rates. Prompt. Service. Morris, Financing Specialist, 3608 Warren St., Philadelphia, Penna.

FOR SALE—MAPS

NEW MAP OF
MID-CONTINENT OIL FIELDS
Suitable for pocket or desk top, shows counties and producing areas in Oklahoma, Kansas, Texas, Arkansas, Louisiana and Eastern New Mexico. Postpaid for $1.
KELLY MAP CO.
P. O. Box 1773, Tulsa, Okla.

Results from consistent advertising in the right medium are accumulative. Use The Oil and Gas Journal Classified wants week after week.

OIL DEVELOPMENT maps, any county in Oklahoma and west Texas. 75c each. State, county and district maps showing oil development. Lindsay Map Co., Franklin Bldg., Oklahoma City, Okla.

ROYALTIES—PRODUCTION

KANSAS ROYALTIES under drilling wells and core drilled blocks. Also Texas royalties. List free. Harry Haynes, Grantville, Kans.

YATES POOL ROYALTY
WILL sell 1 acre or more Sections 10 and 19, Blk. 194, Pecos County at $250.00 per acre. Glen Myers, San Angelo, Texas.

SEND NOW FOR attractive list of leases and royalties owned by us in over ten live Texas Counties. Alamo Investment Company, Box 774, San Antonio, Texas.

ACTIVE WEST TEXAS ROYALTIES $8 per square mile. Big company operation. See maps and bulletins. R. R. Fisk, Box 1214-B, Wichita Falls, Tex.

OIL LEASES, royalties, producing royalties, and drilling blocks. O. O. Milliken. Box 63. Oklahoma City, Oklahoma

J. A. WOLF & COMPANY
127 N. Dearborn, Chicago, Illinois.
We deal in Oklahoma Royalties exclusively.

ROYALTY FOR SALE in Ritz Pool in McPherson Co., Kansas. S. ½ of S. W. ¼ Sec. 36-19-2w close by big well. Write Box 26, Galatia, Kansas.

FOR SALE: Lea County deeded oil royalty. Southeast New Mexico oil leases, low rentals, small investment. Terms; big oil companies active. Win with the winners. Monarch Inv. Co., Roswell, N. M.

ACREAGE for sale in section 10, Range 11 North, 1 West, Oklahoma County, Oklahoma. Write Box E-2, The Oil and Gas Journal, Tulsa, Okla.

ROYALTY AND LEASES
Any western Oklahoma Counties; western Kansas, and southwestern Colorado at low prices.
SAIN AND COMPANY
Forgan, Okla. Liberal, Kans.

WE DEAL in producing oil royalties and active oil stocks. Mail us your bids and offerings.
AMERICAN NATIONAL BROKERAGE CO.
E. T. Marion, Manager
12th Floor Athletic Club Bldg.
Dallas, Tex.

PRODUCING ROYALTIES WANTED. We have ample funds available to make quick cash deal on producing royalties if worth the money and titles clear.
Western Oil and Royalty Company,
609 San Angelo National Bank Bldg.,
San Angelo, Texas.

ROYALTIES—PRODUCTION

KANSAS and West Texas royalty interests. Send today for lists and maps. James R. Haynes, Grantville, Kans.

ROYALTIES. Producing and close in acreage in the Oklahoma City Field. Investment of $500.00 to $50,000.00. W. M. Gallagher, Hersk. Bldg., Oklahoma City, Okla.

ARE YOU GOING to take advantage of your opportunity to be in on the next big Oil Play of Texas or will you pass it up and have regrets? (Pure Oil Company drilled in big oil well on October 14th, three miles west of Smith County Line in Van Zandt County. Humble-Pure-Texas-Gulf-Sun-Amerada-Mid-Kansas and other large oil companies already have large blocks of Leases in Smith County. Will deliver oil leases for three dollars an acre up. No less than twenty-five acre lease handled. Royalty for eight dollars an acre Base and up. Write Richard R. Yoe, P. O. Box 291, Tyler, Texas.

BUY ROYALTY. The royalty that sells for a few dollars today is the high priced producing royalty of tomorrow. We have it at all prices. Elmer S. & Fox Wood, 712 Herskowitz Building, Oklahoma City, Okla. Telephone 7-3514.

REAL ESTATE

FOR SALE—Several tracts of mineral rights. Have one tract of 16,000 acres, another of 715 acres, which have been core-drilled and open pitted. Our geological report gives 240,000,000 tons of Rock Asphalt on the large tract and 4,000,000 tons on the small tract. For complete data address
W. P. HARLEY, Bowling Green, Ky.

WEST TEXAS OIL lands. Fee, lease, royalty. Joe Cunningham, Big Spring, Texas.

WARRANTED MINERAL lands. Rail road crossing tract, near El Paso, Texas, in Mexico. Sixty cents. Joe Cunningham, Big Spring, Texas.

SELL—TRADE, 200 acres, Washita Bottom, 70 cultivated, improved, oil development. E. H. McElroy, Mead, Okla.

Leases - Production

Each week the Classified Wants Section contains advertisements describing properties that may be just the kind that you are trying to get.

Each week good opportunities are listed. Read about them—news of many good bargains is contained in every ad.

The OIL and GAS JOURNAL
PRODUCING REFINING ENGINEERING MARKETING
Classified Wants Section

ADVERTISING RATES

	1 Time	2 Times	3 Times	1 Mo.
3 lines	1.05	1.80	2.25	3.30
4 lines	1.40	2.40	3.40	4.40
5 lines	1.75	3.00	4.25	5.50
6 lines	2.10	3.60	5.10	6.60
7 lines	2.45	4.20	5.95	7.70
8 lines	2.80	4.80	6.80	8.80
9 lines	3.15	5.40	7.65	9.90
10 lines	3.50	6.00	8.50	11.00

(Six words usually make a line)

Compute white space at the above rates.

Mail your advertisement to

THE OIL AND GAS JOURNAL

Tulsa, Oklahoma

RECREATION

FINE HUNTING
ENGLISH RANCH, Dimmit County, on asphalt road; 125 miles from San Antonio. Lots of deer and just one hour on asphalt road to Eagle Pass and Piedras Negras, where you can get anything you want.
HAL A. HAMILTON,
408 First Nat'l Bank Bldg.
DEL RIO, TEXAS.

35 CENTS a line first insertion; 25c a line each additional insertion. Cash in advance.

CLASSIFIED WANTS

CREATE AND BUILD BUSINESS

MAIL your advertisement now. It will be published next week. Cash with order.

FOR SALE—EQUIPMENT

FOR SALE — Complete set Standard Tools. 12x12 AJAX engine (NEW). 2,000 ft. 6⅝-inch, 24-pound. 700 ft. 10-inch, 52-pound. 1,500 ft. 2-inch pipe. F. E. Turner, 217½ Broadway, Muskogee, Okla.

READY FOR IMMEDIATE SHIPMENT—PRICED RIGHT
50 MILES 4" O.D. PLAIN END PIPE
11 MILES 12" O.D. PLAIN END PIPE
15 MILES 4" STD. SCREW PIPE
60 MILES 2" STD. SCREW PIPE
All sizes in casing and line pipe from 2" to 15½" inclusive.
PRODUCERS PIPE & SUPPLY COMPANY
612-13 Kennedy Building
Tulsa, Oklahoma.

FOR SALE—Whitney steel derrick. Three-inch legs, 67 feet high. Good condition. Price $400 f.o.b. our Tulsa yard. Thermal Oil & Gas Co. Phone 2-6969, Tulsa.

TANK CARS

For lease 8,000 and 10,000-gallon cars. Immediate delivery. Write, wire or phone.

HYMAN-MICHAELS TANK LINE, Inc.
Peoples Gas Building,
Chicago, Ill.

FOR SALE—3 Allis-Chalmers motor driven Centrifugal Pumps, 2,000, 5,000 and 7,500 gallons per minute. Low prices. 1—300 Hp. Scotch Marine Boiler. Miscellaneous Compressors, Storage Tanks, Filter Presses. CONSOLIDATED PRODUCTS COMPANY, 17-20 PARK ROW, NEW YORK CITY. BARCLAY 0600.

FOR SALE—MAGNETOMETER
Better than new, in perfect adjustment, used as standard instrument only, scale constant 27.5-temp. coeff.; 0-scale at 0 in field of 0.4958 gauss. Complete with electric calibrating equipment. Also—Portable Helmholtz Electric Calibrating Coils.
ELECTRICAL SPECIALTY CO.
Ponca City, Okla.

FOR SALE—Portable Boiler Shop. Outfit includes Electric Arc Welder, Air Compressor and Acetylene Cutting and Welding equipment. Mounted on 2½-Ton Truck. All practically new. L. H. Stear, 720 West 25th St., Oklahoma City, Okla.

FOR SALE—Two No. 10 Sweetland Filters, with monel leaves. Stein-Brill Corporation, 25 Church Street, New York, N. Y.

WE OFFER FOR SALE, subject to inspection 18 miles used standard 8". 29 lb. wrought iron line pipe, recessed couplings, good threads, mill lengths, was used for high pressure oil line, located Indiana. MAX ZEIGLER & BROS., Muncie, Ind.

USED EQUIPMENT
OFFERED DIRECT
BY OWNER
Pumps—Steam, Duplex 6x4x6 and 4½ x4x4.
New Union Steam Pump 7x4½x10.
Centrifugal, Cameron, 500 gals. min.
Kinney Pumps 5x3x2 and 4x2x2.
Fuel Set Complete.
Sturtevant Turbine and Blower.
Radojet Vacuum Pumps, 1 and 2 stage.
Penn. Air Compressor 9x8.
Troy Engines, 4¼x5.
Leach Fracto Condensers.
Wheeler Condensers-Sterling Sections.
Misc. Tanks 500 gals. to 260,000 gals.
Brown Recording Pyrometers (800 to 1,000° F.).
12 Point Switches.
Leeds Northrop Temp. Controller.
PETROLEUM DERIVATIVES INCORPORATED OF MAINE,
7 East 42nd Street,
New York, N. Y.

MEDIUM SIZE ROTARY, also Cable Tools, 7,000 ft. 6⅝ and 5¼. Sharon Oil Company, Vici, Okla.

SHEET METAL WORK
We fabricate black and galvanized sheet metal for every industrial use. Send blue prints for estimates.
Steel Buildings, Roofing, Siding, Ventilators.
SAINT PAUL CORRUGATING CO.
3-23 West Water St. Saint Paul, Minn.

FOR SALE—EQUIPMENT

FOR SALE. Three 30 HP Superior Oil Engines in first class condition. Can be seen in operation. Address Lock Box 117, Lima, Ohio. Located in Kansas Oil Field.

FOR SALE
100,000 feet 2" Line.
100,000 feet 3" Line.
Second-hand Line Pipe at attractive prices.
THE TRI-STATE PIPE CO.
Bellaire, Ohio

FOR SALE: Machinery and equipment for complete gasoline plant capacity up to ten million cubic feet per day. This plant has latest type equipment and was run but a very short time.
H. F. QUINLAN,
203 Wright Bldg., Tulsa, Okla.
Phone 2-2802.

NEW PIPE THREADERS AND CUTTERS
1—2" to 8" Weiland Type.
3—3½" to 10" Weiland Type.
2—4" to 12" Weiland Type.
Complete die equipment, belt drive. Can be arranged for motor drive.
THOMAS J. LLEWELYN & CO.
Oliver Bldg.
Pittsburgh, Pa.

RANCHES AND FARM LANDS

RIO GRANDE VALLEY, Texas—The valley of golden grapefruit, the garden spot of the United States; sunshine and flowers. For any information write W. T. Jackson, Edinburgh, Texas, P. O. Box 162.

CHOICE Missouri farms for sale at bargain prices; can pay for some like rent. Write us your wants. Chas. R. Bowman, Butler, Mo.

ARIZONA
Free government land in Arizona now open to homestead. Citizens of United States entitled 640 acres each; also Arizona state school land for sale on 38 years' time. Book of information and laws on receipt of $1 or mailed C.O.D. J. W. Angle, Box 693, Tucson, Ariz.

CHOICE SECTION wheat land near Amarillo. 600 in wheat. Bargain for quick sale. Owner, Villa Serena Hotel, Kansas City, Mo.

WANTED

WANTED: RESPONSIBLE parties to drill some city blocks in Earlsboro, Oklahoma. W. M. Worthen, 305 Oklahoma Savings and Loan Building, Oklahoma City, Oklahoma.

WANTED: Parties financially able to help me develop 3,500 acres of shallow acreage, in Zapata County, Texas. I own a lease and one-half royalty on these lands and they lie within five miles of a good shallow oil and gas field. W. M. Worthen, 305 Oklahoma Savings and Loan Bldg, Oklahoma City, Oklahoma.

GOOD DRILLING CONTRACTOR WANTED. On 940 acres prospective oil land in Laclede County, Missouri. Geologist says indication good. T. J. Murray, Springfield, Mo.

WANTED. Parties to sell reconditioned and guaranteed pipe and casing on a commission basis. Write Box E-3, The Oil and Gas Journal, Tulsa, Okla.

PRODUCTION WANTED
We are in the market for producing properties up to 2,000 barrels daily. Give full details as to price, conditions of lease and amount of acreage. We are also in market for good drilling blocks.
C. F. Anderson,
Magnolia Building,
Dallas, Tex.

WANTED—Leases and royalties with settled production, also partially developed or proven leases. Successful and going oil company, headed by practical oil men, has available limited blocks of its convertible Preferred Stock now paying cash dividends of 16% per annum, to exchange for worthwhile properties. Address Box E-11, The Oil and Gas Journal, Tulsa, Okla.

BUSINESS OPPORTUNITIES

OUR EUROPEAN OIL FINDER is available for making drilling locations The manufacturer of this instrument guarantees successful drilling locations D. C. Oliphant, 19 West 44th Street New York.

FOR SALE—Or partner wanted. Patent of first visible gasoline pump. All others are infringments. Write for information. Lee Wilson, Olvey, Ill.

OIL LOCATED before drilling. Geophysical method. Toggodometer Instrument; take pay in oil. No oil, no pay, except traveling and testing expenses. 95 per cent accuracy. O. P. Coffin, Caddo, Tex.

ON OIL, Land Concessions and Mines in Mexico.
CONSULT
A Larralde—Mining Engineer—Associate of The Royal School of Mines, London, Eng.
A. L. Luna—Civil Engineer—National School of Engineering, Mexico, D. F.
Several years with Mexican Petroleum Department. Uruguay, 87th St. P. O. Box 858. Mexico. D. F.

WANTED capital to market Roberts Safety Guard Rail Appliance. Protects life on public highways. Simple, efficient and easily installed at small added cost per foot. Endorsed by leading Highway authorities. An attractive proposition to right parties. Inquire J. A. Roberts, Pres., Roberts Safety Appliance Co., Ashland, Ohio.

YOU can make BIG money helping to develop the gold mining industry of Colombia, South America. For particulars address Davidson, 201 First National Bank, Denver, Colo.

BAILEY, REAVES & SMITH
Oil and Gas Properties.
Specializing in royalty interests
Underlying lease-holdings of the
Major oil companies.
Inquires invited.
MILAM BUILDING
San Antonio, Texas.

WEST TEXAS warranted and mineral lands. Two dollars. Ten year mineral lease sixty cents. Joe Cunningham, Big Spring, Texas.

WE ARE SELLING GASOLINE and fuel oil, enlarging. Want lasting connection with good refinery. P. O. Box 483, Monmouth, Illinois.

WE CLAIM that no drill will ever find oil or gas where the Telefact instrument refuses to register. Not an oil locater, but helpful in following "Shoestrings," or the trend of undeveloped fields. None for sale or rent. We work on percentage. Address Box E-4, The Oil and Gas Journal, Tulsa, Okla.

OIL AND GAS properties for sale, reasonable prices, Arkansas-Louisiana. Address, G. Lucas, 712 Dalzell St., Shreveport, La.

PRACTICAL OIL MAN of long experience wants parties to finance him in buying producing and semi-proven oil royalties on interest basis. Gilt edged references. Box E-15, The Oil and Gas Journal, Tulsa, Okla.

CAPITAL security issues placed. Issues susceptible of underwriting negotiated. Specialized service. Write, Barrick, New Martinsville, W. Va.

IN OUR ORGANIZATION there are a number of people looking for profitable investments. Please send particulars to World Bible Institute, 31 Fort Hill Circle, St. George, Staten Island, New York.

INCORPORATIONS

CHARTERS—Delaware best, quickest, cheapest, most liberal. Free forms. Colonial Charter Co., Wilmington, Del.

DELAWARE incorporator. Charters fees small, forms. Charles G. Guyer, 901 Market St., Wilmington, Del.

HELP WANTED

BROKERS WANTED to sell our attractive leases and royalties in many Texas Counties. National Land Company, Box 73, San Antonio, Tex.

WANTED—Blacksmith thoroughly familiar with forging oil well tools on 3,000 pounds and 8,000 pounds steam hammers. Apply by letter or in person to The Star Drilling Machine Company, Akron, Ohio.

WANTED—Salesman to sell small machinery line through supply houses. Young man preferred. Write Box D-105, The Oil and Gas Journal, Tulsa, Okla.

CHEMICAL ENGINEER wanted with experience in oil refinery work. Duties to consist of design and estimating with view to preparation for sales work. Position requires tact, sufficient aggressiveness, and initiative. An unusual opportunity with a large and progressive manufacturer of process equipment. Location Western Pennsylvania. Write Box E-1, The Oil and Gas Journal, Tulsa, Okla.

WANTED FOR PLANT development work a Graduate Mining or Chemical Engineer who has two or three years oil refining experience. Co-operative temperament essential. In first letter state: Age, outline of college work, description of former position and the work you are now specializing in, married, or single; send photograph. Shell Petroleum Corporation, Sellers, Louisiana.

WANTED. Pipe Line Engineer familiar with coating materials and application. Unusual opportunity for the right man to promote a new pipe coating manufactured by a large industrialist. Give full details as to experience, age, and salary desired. Answer Box E-14, The Oil and Gas Journal, Tulsa, Okla.

ASST. SUPERINTENDENT—For lubricating division of large oil refinery. Prefer man familiar with vacuum distillation, modern contact filtration, as well as the manufacture of bright stock by the Centrifugal Method. In reply please state age; give details of education and experience; state salary expected; date available. Send kodak or other picture of yourself. Replies will be held confidential. Address Box E-16, The Oil and Gas Journal, Tulsa, Okla.

POSITION WANTED

YOUNG MAN with nine years experience, one year abroad, would like position as operator or repairer of air compressors. Capable of managing fuel, oil, or gas type. Prefers to locate in Mid-Continent area. Good references. Write Box D-100, The Oil and Gas Journal, Tulsa, Okla.

CHEMIST
Wants Employment.
Ten years experience as city chemist in large western city. Address
Box E-6, The Oil and Gas Journal,
Tulsa, Okla.

CERTIFIED PUBLIC ACCOUNTANT, thirty years of age, married, ten years' experience. At present employed; seeking connection with corporation or public accounting firm where there is opportunity. Write Box E-13, The Oil and Gas Journal, Tulsa, Okla.

REFINERY SUPT. — Experienced in making light oils, lubricating oils, paraffin wax, asphalt, four different types cracking units. Foreign or domestic service. Write Box E-10, The Oil and Gas Journal, Tulsa, Okla.

EXECUTIVE MECHANICAL engineer, age 36, with large oil company, seeks connection as chief or asst. chief engineer. A thorough knowledge of all phases of refining design, construction and operation. Write Box E-12, The Oil and Gas Journal, Tulsa, Okla.

ADDRESSES WANTED

NOTICE: Frank Bryant write E. O. Burrows, Seminole, Okla. Box 97.

OIL INDUSTRY PRINTING

OIL FIELD LEGAL BLANKS
Leases, assignments, releases, township books, well records, etc. Request on your letter head gets free catalog. Old Press, 215 East Third St., Tulsa, Okla.

Two-Cent Reduction in Chicago Area

Motor Gasoline in Light Spot Demand. Kerosene Very Dull and Easy. Demand for Distillates Light With Close Prices

By J. B. Waldo

CHICAGO, Nov. 11.—The reduction of 2 cents a gallon in the tank wagon and station prices for gasoline in the city of Chicago only went into effect today, the reduced prices being posted by all the major companies this morning. This cut is made in what is termed the metropolitan area only and extends as far north as Waukegan and as far west as Wheaton but in the south goes only to the Indiana line and does not take in Hammond, Gary and associated points. It will be a difficult matter to prevent the reduced prices from spreading and many are of the opinion that it is merely a forerunner of a general cut over the territory.

The markets here were very quiet today but the observance of Armistice Day had something to do with it as many of the oil offices closed at 1 p. m. U. S. Motor gasoline was in light spot demand, quotations being made to jobbers and to marketers of 6⅝ cents.

Kerosene and Distillates

Kerosene was very dull and prices were easy, some quotations of 4½ cents being made although major refiners were holding for 5 cents.

The demand for distillates was light and for immediate business there was a tendency to name close prices although the buyers seemed to be little interested in any price named. Gas maker's gas oil was offered to marketers for resale out of the group at 2⅝ cents, a quarter of a cent under recent quotations with practically no new business reported. Zero gas oil was just a little easier for spot orders but steadily held for future delivery. This condition also prevailed in the high gravity zero fuels for home burner use, some small quantities being offered at around 5 cents below recent quotations to secure immediate business. The continued mild weather is causing some backing up of furnace oil. Industrial fuels are moving steadily and in good volume on contracts but new business today was still light. Prices are steady on these products, which are not easy to buy, although occasionally a price is quoted for some attractive order that causes buyers to believe that fuel oil is more abundant than the offerings would indicate.

The weather is not favorable as it rained all day Sunday with a mild temperature. The outlook is for a hesitating market, while the situation following the local gasoline cut is developing.

Small Stocks Held

The jobbing trade right now seems to be trying to see on how little gasoline it can do business. Every jobber seen, every report made by those who are trying to sell to the jobbing trade, emphasizes the statement of reduced stocks and the intention further to reduce the quantity of gasoline in storage, when this is possible. The head of one distributing concern said his company the night before did not have enough gasoline at its main station to make all its deliveries. The next morning a tank car reached the company's siding and this would have to do until the next car arrived. He said that if the car had been delayed he would have had to borrow a truckload from some other station. Another admitted that his station had run entirely out of U. S. Motor gasoline, but rather than order an extra car it had been selling U. S. Motor and delivering 375 endpoint gasoline. The consumption is still better than fair wherever the roads are not too soft.

The controlling factor in the situation which causes the jobbers to strive to reduce their inventories to the lowest possible amount, is the expectation of a change in the tank wagon scale to a lower basis. The trade in this territory expects that the reduction will be 2 cents a gallon and that it will be made between November 15 and 30. Some believe the reduction will be only 1 cent. A few say there is no more reason for a reduction now than there has been for several weeks, and that if the big distributors really want to they can carry the present price for another six weeks which would bring the industry to the beginning of a new year when there is commonly a better market.

General Situation Favorable

The general situation in the petroleum industry is really at present more favorable to the maintenance of tank wagon prices. The crude situation has been materially improved by curtailment of production. Generally after this time in the year production declines from natural causes. Another factor is that the stocks above ground of both crude and refined products is so large that a little more or less really is not material. With crude holding and the consumption holding well above last year, it would not be as difficult to hold the price to the public, as it would be if production were running wild or the consumption dropping below last year.

Prices at the refinery in a large measure have discounted a possible decline in the tank wagon price. The major refiners are still holding their price at 7½ cents for U. S. Motor gasoline, Group 3 basis. The contract price to their regular customers with a marginal contract is now ranging around 7¼ cents.

The buyer for one of the large local distributors stated that he had several quotations of 6⅝ cents for West Texas material and he expected to be able to buy Oklahoma material at that price. He is stated to have placed the order with one of the nearby refiners at 6¾ cents, Group 3 basis.

The higher gravities are a little better in movement but no great improvement has been noted and while some refiners have held firm views others have made slight concessions. The jobbing trade has shown a little more interest in finding out just what the situation was, but it has not followed up its inquiries by worth while purchases.

Brisk Demand for Antiknocks

The demand for the antiknock gasolines and particularly the blended Ethyl product has cut into the domestic demand for the higher gravities and apparently this demand for the blended product is now cutting into the sale of the refinery brands of antiknock gasoline. One of the largest independent distributors in the Indiana territory which has always sold under its own brands and has had a satisfactory make of antiknock gasoline, has notified its source of supply of the termination of its contract for its antiknock gasoline and has taken out a license to refine and blend the popular article which it will sell under a hyphenated name made up of the name of the company and the name of the blending material.

The Standard Oil Co., which held the exclusive contract for the use of the fluid used to make the blended gasoline up to March last, has countered the wide use of this fluid by other refiners by bringing out an improved product. This has been done by using a 60-62 400 endpoint or possibly better instead of the usual U. S. Motor gasoline. Its sales are much ahead of last year in its territory. Competition is becoming as keen in this special, nationally advertised motor fuel as it is in the ordinary grades of gasoline. Some dealers who have been handling it now say that it is not as profitable as formerly as too many have it.

Slow Demand for Kerosene

There has been little doing in kerosene and sales offices have about given up the idea that there will be more than a merely hand-to-mouth demand for occasional cars until next spring. Prices are unsettled by the fact that some refiners have kerosene which they would like to move. Salesmen have been heard to ask good customers what was the lowest price quoted for good kerosene and offer to meet any price made by a reputable refinery. One of the largest companies has been most active in reducing its stocks and some low prices have been made to real buyers but the general price to the trade for spot orders is 4½ cents with some refiners still holding a price of 5 and even 5¼ cents. Any sales made at these prices are to regular customers in connection with larger deals for other products.

Distillates are more or less connected with the kerosene market, as on a pinch the latter can be sold for the former and the distillate cut made to include the kerosene, so that with a weak and inactive kerosene demand, the output of distillates might readily be increased. There has been real pressure to sell distillate in this market during the last week and prices suffered to some extent. The demand has been light owing to causes which are entirely natural.

Heavier Oils Move More Uniformly

The heavier furnace oils move more uniformly over the season for they are supplied to the burners in large buildings and the supply must be replenished frequently. Failing to receive additional orders for tank cars of distillate after the initial deliveries were made, refiners have canvassed the dealers for more orders and find that they must make lower prices to get the business.

Good 38-40 or 37-40 distillate, light and sweet, was sold to the trade last week at 3½ cents and marketers have bought at prices which permit them to sell at 3½ to 3⅝ cents if they can get the orders. Some of the largest refiners in this vicinity are still out of the market but others have distillate to sell to the trade. Their present prices are 3⅞ to 4 cents but their earlier prices were from 3 to 3¼ cents. Not all of this material has been delivered to distributors and much of it is still in the latter's tanks and will have to be moved before there can be much new business at the asking prices of refiners.

The demand last week was largely from the smaller dealers with limited storage both city and country and was made up largely on deliveries against contracts, most of which carry the market price date of shipment.

Gas Oil Situation Better

The gas oil situation was better than for distillates, there being less pressure to sell and a larger demand for other purposes than as domestic fuel. The gas company demand is good on contracts but rather light as to spot buying. Several refiners have been quoting 2⅞ cents for gas makers' oil conforming to the U.G.I. specifications except that the sulphur content is above one-half of 1 per cent which is the regular specification, but many gas companies will now accept without questioning gas oil with a sulphur content of less than 1 per cent.

Some dealers are complaining that their quotation of 2⅞ cents has not brought the business but that does not necessarily mean that the buyer had a price of less than that quoted by the one who failed to get the order. The supplies of straightrun gas oil are limited at present in the field owing to the fact it is said, that one of the large companies has been buying heavily for its cracking stills.

Some straightrun gas oil in the heavier gravities has been purchased by some of the industries for other uses than either gas making or cracking but these uses are limited as to needs for oil. There is some demand for the same uses for gas oil with gravities as low as 26-30 degrees.

The zero oil is in fairly active demand for heating but the largest business right now is in the gravities less than the regular 32-36. This latter is in somewhat the same position as the distillates except that the demand is more active and the offerings decidedly less so that the market is better maintained.

Strongest in Entire List

The heavy industrial oils are really the strongest product in the entire list, if bright stocks be excepted. There is a good demand, mostly on contract. Recently some plants announced that they would close down, among them being an occasional factory in the automobile industry and in the radio industry. But for the most part the industries are using their full quotas of fuel oil and in most cases the individual purchases are larger than a year ago. Heavy fuel oil is being used now for heating as well as for power and there are many plants which operate on electricity but depend on oil for heating.

West Texas refiners have offered a little fuel oil, 17-20- gravity zero cold test and rather high in sulphur, which they promptly sold out at 65 to 70 cents, Group 3 basis. One of the Ohio refineries has had some 24-26 oil but it is sold up and is not quoting.

The trade is perplexed by the scarcity of fuel oil and asserts that refiners are holding their good fuel for a higher market. It looks as though there would be a firm market for heavy fuel oils for the winter and that with really colder weather will come some further advances in prices.

Many Protected by Contracts

Of course many users who protected themselves with contracts made when prices were under the influence of the avalanche of fuel oil from West Texas. This did not continue and only a small portion of the fuel oil contracted for was delivered by these refiners, which has made a great difference in the supply. This has been further reduced by the use of much fuel oil by the cracking stills.

The withdrawal of the Shell refineries as sources of supply for heavy fuels has been a contributing cause for the stronger market. They were the largest sellers of these grades in this market and today they have nothing to offer but a little gas oil straightrun, a little 28-30 heavy industrial oil and a little distillate. The 28-30 is a blended oil with a high flash, not a furnace oil at all.

The market for Mid-Continent bright stocks is firmly held and refiners in that field state that they expect higher prices next year than this as the demand will continue and they know of no material additions to the supply. They are contracting on a 33 to 39 cents basis and some of them state that they are making larger contracts with their old customers than a year ago as these customers actually used up the full quantity contracted for before the end of August. The Pennsylvania bright stocks have been a little lower in price here owing, it is explained, to the decline in Pennsylvania grade crudes. Neutrals are easy, steam refined stocks dull, motor oils quiet.

Steady Tone Rules in Eastern Market

Gasoline and Kerosene Apparently Pegged at Current Levels for Month and Trade Operating Confidently on That Supposition

By A. E. Mockler
New York Bureau, The Oil and Gas Journal, Rooms 1919-21, No. 154 Nassau Street

NEW YORK, Nov. 11.—Price movements of major importance were lacking in East Coast refinery markets this week, a fairly steady tone ruling on the principal refined products Gasoline and kerosene are both apparently pegged at current levels for the entire month, and the trade is operating with confidence on that supposition.

Red and pale oils have strengthened somewhat in the East this week, with steam refined stocks also higher on some grades, although bright stocks have eased off. Paraffin waxes are lower on practically all melting points, reflecting a slackened demand from both the domestic and export trades, and shading by weak spot holders .

A somewhat better feeling pervades the market, based on the more encouragaing developments in the crude oil position. With the conservation movements in various states showing more effectiveness, and California falling into line with the rest of the country in the move to balance production and consumption, the trade here feels that the outlook for the coming year is more favorable.

Refiners are getting their selling campaigns for 1930 in order, and contract bookings of fuel, gas and Diesel oils for the coming year will probably get under way within the next fortnight. In the fuel oil division, however, the major consumers in the marine field are already under contract for 1930, at current price levels. The Diesel oil basis is not expected to show any change for next year.

Tank Car Gasoline

Principal refiners continue to adhere to the 8¾ cents basis for U. S. Motor gasoline at local refineries, with the market at South Atlantic terminals quoted a quarter cent per gallon over this level. There has been a well sustained movement into distributing channels during the week, with jobbers operating on a fairly broad scale for this season of the year.

Price cutting is of negligible importance in the present market, and there appears to be a general tendency to hold up to the quoted level. In fact, some interests which are normally on the low price side of the market would now like very much to see a 9 cents level established, and there was some indication a fortnight ago that the market would be advanced to that level hereabouts. In view of this strong undertone, the outlook for maintenance of the present schedule for the balance of 1929 would appear to be rather favorable.

Tank car movement of premium quality fuels has shown a perceptible increase since the start of the month, and gallonage on antiknock motor fuels is expected to show a steady gain during the colder months ahead.

Tank Wagon Gasoline

The situation is without change in this branch of the market. Leading marketers are adhering to posted prices, in the main, and the competitive situation is brighter, perhaps, than at any time previously in the year.

Notwithstanding the lateness of the season, consumption is holding up well, and sales totals are consistently ahead of those for the comparable period in 1928.

Many of the principal marketers in this area are now distributing three grades of gasoline. The Pure Oil Co. is the latest addition to the ranks of the "3 qualities" group and is conducting an extensive advertising campaign on Purol Gasoline, Purol Detonox, and Purol Pep, its latest product, described as "the new Gyro Vapor-phase process gasoline." In connection with the introduction of "Purol Pep" the company has cut the premium on its "Purol Detonox" from 3 to 2 cents per gallon over the retail quotation for its regular quality motor fuel. In connection with its new product, the company says: "Purol Pep sets a totally new standard. There is nothing else remotely like it, because this new Gyro Vapor-phase process has never before been employed in gasoline refining. More than three million dollars were spent by The Pure Oil Co. to perfect it."

Kerosene

A steady market for tank car kerosene prevails, water white holding at 7¾ cents per gallon at local refineries. Refiners have booked a good volume of business at this price for delivery over the balance of November, and current indications are that this price will hold through the coming month as well. Stocks of kerosene are not excessive, and a steady volume of small lot export business has aided in keeping the market in firm position in the East.

Tank wagon sales of kerosene have shown some increase during the week and marketers continue to quote the market at 15 cents per gallon in this area. Assuming that this quotation holds for the balance of the year, and there is nothing in sight to indicate any change, the tank wagon kerosene market will have gone through more than two full years without change. This degree of stability is somewhat unusual.

Refiners and marketers operating in the New England territory are moving kerosene in large volume through their filling stations. This method of distribution has come to the fore within the past two years, and has been found of great value in keeping gasoline filling stations operating on a profitable basis the year 'round.

Lub Oils

Increasing demand for red paraffin oils has brought out a firmer feeling in the local market, and prices are higher on all grades this week. Spot 200 red paraffin oil is up a quarter cent to 9¼ cents per gallon, with 225 showing a half cent advance to 10 cents, 250 up a corresponding amount to 11½ cents, and 285 quoted one cent higher at 12½ cents per gallon, all in tank car lots, f.o.b. Bayonne refineries. Pale paraffin oils are unchanged in price, but are reported to be moving out in larger volume this week. Industrial demand is on the increase, and in addition refiners are experiencing a fairly active export inquiry.

Mixed trends were discernible in the cylinder oil situation during the current week. Demand for 600 steam refined had increased perceptibly, and the market was sharply higher at 33 cents per gallon, with 635 up to 35 cents and 650 held at 39 cents per gallon on spot. Warren 600 E, on the contrary, had softened somewhat, and was available at 40 cents per gallon, with 600 Oil City E lower at 39½ cents per gallon. Bright stocks were also in easier position at 59 to 60 cents per gallon for light and 57 to 58 cents per gallon for the dark grades.

Continued heavy demand for motor oils is keeping blenders and compounders busy, and refiners are looking for a well sustained inquiry for cylinder oils and bright stocks over the balance of the year. Increased export demand is also counted upon to help the market during this period.

Domestic pharamceutical manufacturers were in the market for the white grades in substantial volume during the week, and a good movement against standing contracts was reported. Industrial demand for the lower grades was also along fairly active lines.

Export buyers were showing more interest in offerings of petrolatum for prompt and nearby shipment, but were pressing for price concessions, with refiners little inclined to go much under listed quotations.

Fuel Oil

Refiners do not look for any change in the bunker "C" price situation over the remainder of the year, but the outlook favors a maintenance of the present price of $1,05 per barrel at terminals. Considerable interest is being shown in the current move to curtail domestic crude output, and the success of the movement to balance production with consumption is expected to be reflected in a betterment of the fuel oil situation during 1930. Co-operative action among Venezuelan producers along the same lines, it is felt here, would go far toward assuring refiners of a more adequate return on their fuel oil sales.

Consumption of fuel oil is being well maintained in the East Coast area, and several recent shipments from California have been absorbed without disturbance to the market. Marine interests continue to draw bunker oil stocks against contracts in substantial volume, and domestic consumption is on the increase, stimulated by the heavier demand for fuel oil for industrial heating purposes.

Gas Oil

Refiners continue to maintain the market for 32-36 recycled gas oil at 5¼ cents per gallon f.o.b. refineries in tank car lots, and the market appears fairly well pegged at that level, insofar as the principal interests here are concerned. Some of the smaller sellers are still shading this quotation by a quarter of a cent per gallon.

Low grade gas oil sales are heavy, and this oil is cleaning up readily. Jobbers have been in the market for this oil for delivery against their furnace oil sales, many types of domestic heating units requiring a fairly high test oil for satisfactory operation.

The outlook favors a well sustained market over the remainder of 1929, notwithstanding some recent increase in the movement of gas oil from California to East Coast markets

Diesel Oil

Refiners are preparing to launch their sales campaign for 1930 contract business, with most of the contracts expected to be made on the basis of $2 per barrel at refineries, unchanged from the current year's quotation.

Demand for Diesel oil is holding up well, and sales are running materially ahead of those for the comparable period last year. Marine interests are taking the oil in much larger volume, and there has been a considerable increase in the volume of domestic sales. Refiners do not look for any appreciable gallonage in Diesel oil for use in aircraft for some years to come.

Stocks of low grade distillate held at East Coast refineries are not large, and refiners are moving out this oil readily against furnace oil contracts. Considerable quantities of distillate have been received from California during the past few months, and this oil likewise has moved into distributive channels without any disturbance to the price basis here.

Paraffin Wax

Spot values have eased off this week, due to a noticeable slackening in buying interest, and prices are lower all along the line. Stocks of 120-122 a.m.p. fully refined are offered at 4 cents per pound, off one-eighth cent, with 125-127 a.m.p. at 4⅛ cents, off one-fourth cent, 130-132 a.m.p. is down five-eighths cent per pound to 4⅞ cents, with 133-135 a.m.p. showing a quarter cent reaction to 5⅛ cents per pound. The market on 135-137 a.m.p. remains steady at 6¼ cents. with comparatively little offered.

Current weakness appears confined almost entirely to spot stocks, refiners in most instances continuing to show fairly steady price views. The current price break on the spot position was rather unexpected, and is believed to reflect the accumulation of stocks in weak hands. The trade is looking for an early shift in the market trend toward previously prevailing levels.

Export Markets

The Gulf market has been enlivened this wek by an inquiry for a cargo of 6,000 tons of 64-66 gravity gasoline, December loading, for shipment to France. This is the first open market inquiry noted for some weeks past, most of the recent trading having been done through a London firm which bought direct in the field.

California refiners are reported to have changed their differential on export gasoline and are now quoting on a basis 1¼ cents per gallon under the Gulf. The former differential was 1 cent, and the additional quarter represents freight differential.

Europe is reported to have taken a fairly large cargo of red oil out of the Gulf, the cargo reputedly involving 45,000 bbls. of No. 2 unfiltered pale oil and No. 5-6 color red oil at 6¼ cents and 8½ cents per gallon, respectively.

Bunker fuel oil is still quoted for ex port at the Gulf at 70 cents per barrel, but no activity is reported in this branch of the market for the current week. Export buyers of fuel and Diesel oils are reported turning their attention to California, where some low priced oils are available for shipment to foreign markets.

While paraffin waxes have continued to move out in good volume against previously booked orders during the current week, there has been a material falling off in amount of new business tendered, and the market has weakened in sympathy with this sluggishness.

Cylinder oils have been meeting with a fair export call in Eastern markets, with prices, in the main, fairly steady. Export buyers are "shopping" the Pennsylvania market in an effort to bring to light offerings of stocks at concessions under the currently quoted schedules.

No further export interest in bulk kerosene is reported at the Gulf, the market for burning oil having been unusually quiet during the past few months.

Petroleum Exports

The following table shows principal exports of refined petroleum products from New York during the past three weeks (all figures in gallons unless otherwise noted):

	Week Ended		
	Nov. 2	Oct. 26	Oct. 19
Gasoline	790,100	212,400	46,400
Naphtha	303,400	815,600	1,627,400
Kerosene	45,700	64,300	81,300
Fuel oil	262,800	222,000	2,000
Lubricating oil	871,500	1,734,800	1,122,200
Petroleum, refined	1,443,900	1,810,700	606,100
	Pounds		
Petrolatum	53,000	14,200	
Paraffin wax	2,528,600	1,444,500	2,346,500
Refined	179,000	23,000	225,500
Scale	437,300	596,180	503,600
Lubricating grease	631,300	1,192,800	1,233,900

Recent heavy buying of motor fuel at

(Continued on Page 139)

THE TRADE MARK

ERECO
DUPLEX

On Equipment Is Guarantee That It Is Genuine

It Is Placed On:

ABSORBERS
STILLS
RECTIFIERS
REBOILERS
REFLUX CONDENSERS
HEAT EXCHANGERS
PREHEATERS
AFTER COOLERS

and All Other Equipment Designed and Manufactured By

ERECO
DUPLEX

ENGINEERING, RESEARCH & EQUIPMENT CO.

Consulting, Research, Design Manufacturing, Construction.
Absorption Plant And Refinery Equipment

LOS ANGELES
Roosevelt Bldg.
Phone Van Dyke 3342

TULSA
Exchange National
Bank Bldg.
Phone 4-3761

DALLAS
Athletic Club Bldg.
Phone 2-6841

Natural Gasoline Manufacture

PANHANDLE HAS LARGE PRODUCTION IN TEXAS

The Panhandle area of Texas continues to expand its natural gasoline plant operations and now easily leads all other districts in Texas according to a report which covers the production by counties for September. The bulk of the increase is coming from Gray County where new plants have been built and old plants enlarged. Additional equipment is being installed and it is expected by the end of the year the output will be 200,000 bbls. monthly.

Outside of the Texas Panhandle the Breckenridge area in Eastland and Stephens Counties continues to have the largest production. Although some of the plants in that section have been operated for several years the production has held up remarkably well. The following table gives the production in Texas by counties for September:

Panhandle District

Counties—	Bbls.
Carson	44,235
Hutchinson	292,728
Gray	172,295
Potter	1,492
Moore	7,349
Wheeler	14,357
Total	532,456

West Texas District

County—	
Reagan	26,747
Howard	338
Crane	40,131
Total	67,216

North Central Texas and Wichita Districts

County—	
Eastland	127,624
Shackelford	23,894
Brown	20,231
Stephens	101,652
Coleman	1,675
Palo Pinto	10,281
Jones	2,884
Archer	4,535
Clay	3,438
Wichita	47,372
Wilbarger	5,592
Young	18,409
Throckmorton	455
Total	368,092

OHIO DISMANTLES PLANT

The Ohio Oil Co. has dismantled its gasoline plant in Caddo Parish, near Gilliam, La. The plant located on the E. K. Smith tract has been shut down for some time.

In Crawford County, Illinois, the company has shut down its Susannah Smith plant near Annapolis and also its J. C. Wilson plant near Robinson, Ill. Both plants are of the compression type with small capacity.

ABANDONS TWO PLANTS

The Humble Oil & Refining Co. due to diminishing gas supplies has shut down and dismantled two of its plants in Texas. One of the plants was located near Woodson in Throckmorton County and the other near Wortham in Freestone County.

The Humble company at present has 13 plants operating in Texas with a large plant under construction in the Yates Pool of Pecos County.

HOME GAS SERVICE

CHATHAM, Ontario, Nov. 9.—Canadian Western Natural Gas Co. of Calgary has established a home service for gas users in charge of Miss H. L. Aylsworth, who will advise not merely on efficient utilization of gas but on cooking and other domestic activities. Canadian Western will next spring extend its service to the suburb of Ogden.

30 PER CENT GAIN IN REFINERY UTILIZATION SO FAR THIS YEAR

The coastal refineries continue to absorb the bulk of the natural gasoline output in the United States and their percentage gains this year exceed those of 1928.

The natural gasoline industry has been fortunate this year, in that petroleum refineries have been in a position to absorb a large increase in output which at the present time totals approximately 150,000 bbls. daily in the fields of the United States. Coastal refineries for several years have been large blenders of natural gasoline despite the fact that except on the West Coast, these refiners have to add a freight rate to the cost of the natural gasoline at the plants.

As shown in the following table based on Bureau of Mines reports petroleum refiners in the United States the first nine months of this year blended 32,940,000 bbls. of natural gasoline at their plants. This was an increase of 7,399,000 bbls., or nearly 30 per cent over the same period in 1928. This is an exceptionally large increase and except for brief periods has taken practically all the available supply.

Only two of the ten refining areas in United States failed to use more natural gasoline this year than last. There was a slight decrease in the Appalachian area and a decrease of approximately 18 per cent in Oklahoma, Kansas and Missouri group of refineries. In the case of the inland group of Appalachian refiners the decrease is probably due to the fact that these refiners have to pay a relatively high freight rate to get the natural gasoline to their plants. The bulk of the supply for the inland territory east of the Rocky Mountains comes from the Mid-Continent area and the minimum freight rate to Pennsylvania, East Ohio and West Virginia refineries is 3.5 cents per gallon.

Several refiners in Oklahoma, Kansas and North and Central Texas area where over 80 per cent of the Mid-Continent natural gasoline production originates have reduced their natural gasoline purchases this year and this has been reflected in the government reports. Operating with high gravity crude oils and modern cracking process these refiners do not need as much natural gasoline to give their refinery grades the required volatility.

Coastal Buyers

So far this year a large part of the Mid-Continent natural gasoline production has been moved south to the coastal refineries in Texas and Louisiana. As shown in the table the purchases of the Gulf Coast refineries totaled 9,494,000 bbls. the first nine months of this year. This was an increase of almost 40 per cent over the same period in 1928.

The East Coast refineries although their purchases have fluctuated from month to month for the nine-month period bought more natural gasoline this year than last. The East Coast refiners this year have been supplied by both Mid-Continent and California manufacturers. The following data show the wide fluctuation in the quantity of natural gasoline blended at East Coast refineries: January, 218,000 bbls.; February, 340,000 bbls.; March, 177,000 bbls.; April, 288,000 bbls.; May, 231,000 bbls.; June, 85,000 bbls.; July, 91,000 bbls.; August, 234,000 bbls.; and September, 132,000 bbls.

The coastal refineries in general operate with lower gravity crude oils and this in part accounts for the fact that they are the largest customers of the natural gasoline industry. They also supply the bulk of the gasoline exported and since higher gravity and more volatile products are required by the foreign trade, heavy blends of natural gasoline are desirable.

California Situation

California natural gasoline production has had a sensational increase this year and West Coast refineries have had no difficulty in obtaining all the material needed for blending. Refinery utilization of natural gasoline increased from 8,728,000 bbls. the first nine months of 1928 to 12,963,000 bbls. for the same period this year a gain of 50 per cent.

Natural Gasoline Blended at Refineries
(Data given in thousands of barrels)

	First 9 months		
	1929	1928	Increase
East Coast	1,796	1,387	409
Appalachian	444	501	*57
Indiana, Illinois, Kentucky	1,650	1,564	86
Oklahoma, Kansas, Missouri	3,001	3,542	*541
Texas	6,963	4,943	2,020
Louisiana and Arkansas	5,004	3,848	1,156
Rocky Mountain	1,119	1,001	118
California	12,963	8,728	4,235
United States	32,940	25,541	7,399
Texas Gulf Coast	5,601	4,014	1,587
Louisiana Gulf Coast	3,893	2,967	926

*Decrease.

MAGNOLIA COMPANY HAS 29 OPERATING PLANTS

The Magnolia Petroleum Co. which has been making numerous changes in the operation of its natural gasoline plants now has 29 plants in operation with a net output of approximately 100,000 gallons daily. The company has practically rebuilt some of its plants and has also built new plants.

Formerly a majority of the Magnolia plants were of the straight compressor type. Oil absorption equipment has been added to several of the plants. In addition fractionating equipment has been installed.

The Magnolia plants are scattered over four states. Most of the plants are in Oklahoma and Texas but the company has one plant in Arkansas and two in Louisiana. The company now operates two plants in the Earlsboro Pool of the Greater Seminole area of Oklahoma where the company is a large producer of crude oil. These two plants are producing approximately 15,000 gallons daily.

SHUT DOWN PLANTS

The Wolverine Petroleum Corp., a subsidiary of the Shell Petroleum Corp., recently has shut down two of its plants in Oklahoma, and has dismantled a third which had been shut down for some time. The two plants which were shut down are located in the SE, Section 26-26n-13e, and the NW, Section 32-28n-13e. The former had a capacity of 700 gallons daily and the latter 500 gallons. Both plants are of the compression type and were operated for several years.

A plant located in the SW, Section 1-27n-13e, has been dismantled. The corporation still has four plants operating in Oklahoma.

PRESTON OIL CLOSES PLANTS

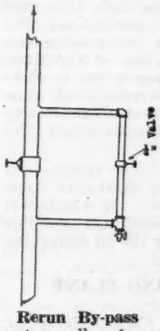
The Preston Oil Co. of Columbus, Ohio, one of the large natural gasoline manufacturers in Ohio, has shut down three of its plants. These plants are located in Wayne Township, Muskingum County, Rome Township, Athens County and Sheffield Township in Lorain County. These three plants of the oil absorption type have a capacity of 7,500 gallons daily.

The company recently started operating a plant in York Township of Medina County. This plant has a capacity of 2,500 gallons daily. The company has six additional plants in operation with a capacity of 45,500 gallons daily.

A PRACTICAL SUGGESTION

RERUNNING GASOLINE

During the first few cold snaps there is always the possibility of making discolored gasoline, because of the drip that may spray through scrubber, or on account of the lower absorption oil temperatures, more permanent gases will be absorbed that may mechanically carry over some of the colored product. Few operators escape the worry and troubles caused by gasoline not meeting the color specifications and allowance of a quarter of a cent to 1 cent a gallon for off-colored gasoline at destination.



Rerun By-pass

If the plant is not operating with an under capacity still, dephlegmator and gasoline coils, it is nearly always more profitable to rerun the gasoline at the plant. It is especially preferable to shipping, say about 21 color product and trusting to luck that it "gets by." The mental strain is not worth the gamble.

In rerunning care should be exercised so that gasoline is redistilled very slowly so that the system will not be loaded up and if there are periods during the day when production is greater than at others; that is, if there are head wells, advantage should be taken of this condition and most of the rerunning accomplished at these lower production periods. Gasoline under no circumstances should be introduced in the oil before it enters the absorbers, even pumping the gasoline into the oil between absorbers and still is not the best practice, as there is some likelihood of overloading or slugging which might carry some of the oil over, or otherwise result in inefficient recovery.

Good results are obtained by running the raw gasoline directly into the still over the third or fourth plate from the bottom and can be pressured in from the stock tank. To eliminate rerunning too fast and also to regulate the operation, a by-pass made of quarter-inch pipe can be used. The rate is thereby controlled by a quarter-inch globe valve.

Practical suggestions by those connected with the construction and operation of natural gasoline plants are invited. Payment will be made as soon as suggestions are accepted. Address all communications to the Natural Gasoline Department, The Oil and Gas Journal, Tulsa.

Brief Items for Petroleum Refiners

Shortage of Crude Oil for Purchasers In Muskegon Field

MUSKEGON, Mich., Nov. 9.—With a crude oil production of approximately 9,000 bbls. daily in the Muskegon area there is a shortage of supplies for the four local refineries and the pipe line companies who gather the crude oil for outside refineries. None of the refineries or pipe lines is running capacity.

Of the eight purchasers of crude oil six have been paying the Mid-Continent gravity scale. They are as follows: Standard Oil Co. of Indiana (run by the Dixie Pipe Line Co.), Northland Oil Transit Co., Independent Pipe Line Co., Michigan Central Refining Co., Old Dutch Refining Co. and Muskegon Refiners, Inc.

The other two purchasers are the Shell Petroleum Corp. and the Simrall Pipe Line Corp. The former is paying a contract price of $1.25 a barrel and the latter pays the Mid-Continent gravity scale less 15 cents a barrel carrying charge. The Mid-Continent gravity scale runs from $1.45 to $1.65 with an average of $1.55 for 38 gravity crude.

The Dixie Pipe Line Co. is running and shipping about 4,000 bbls. a day of oil to Standard of Indiana refineries at Zilwaukee, Mich., and Whiting, Ind.

The Northland Oil Transit Co. and the Michigan Central Refining Co. operate a combined pipe line system that is running about 1,000 bbls. of oil daily for refinement in the latter company's plant in the field. The Independent Pipe Line Co. is running about 1,200 bbls. a day to the Henry H. Cross Co. plant in the field.

The Old Dutch Refining Co. is running about 1,500 bbls. a day but the company's plant has been shut down for 18 days. Operations were resumed today. Before the shutdown the company was running about 2,500 bbls. a day through the plant east of Muskegon.

The Muskegon Refiners, Inc., has completed a pipe line to several producing leases but has not yet started operations of its 500-bbl. skimming plant on M-20.

The Simrall Pipe Line Co. has been running its own oil and that purchased by the Shell Petroleum Corp. Daily runs have averaged about 2,000 bbls. recently with most of the oil going into storage. Some has been shipped by barge to the Globe Oil & Refining Co.'s plant at Lemont, Ill.

If there are any price changes in the field they are not expected to be more than the Mid-Continent gravity scale unless one or more of the local refineries offer a premium in order to get more of the crude.

TEXAS LEASES OFFICES

The Texas Company has leased 14 floors of the new 68-story Chrysler Building now under construction in New York City at Lexington Avenue and Forty-second Street. The company's offices will occupy all the floors from the sixteenth to twenty-ninth.

The lease extends from May 30, 1930, to May 1, 1951, at a yearly rental of $583,000. The Chrysler Building which is nearing completion is the world's highest office building.

OHIO MEETING AT COLUMBUS

The convention and equipment exhibit of the Ohio Petroleum Marketers Association will be held at the Deshler-Wallick Hotel, Columbus, Ohio, November 19, 20 and 21. W. A. Milne, 508 Ohio State Savings Building, is executive secretary of the association.

FUEL OIL MORE DESIRABLE THAN COAL IN HYDROGENATION PROCESS

Fuel oil residuum from a petroleum refinery operation is more adaptable to a hydrogenation operation than coal according to A. C. Fieldner, chief chemist of the Bureau of Mines. In an interview appearing in the United States Daily, Mr. Fieldner, who is well known in the oil industry due to his long connection with the government bureau, discusses the development of hydrogenation which has become of particular interest to petroleum refiners due to the fact that the Standard Oil Co. of New Jersey and subsidiary companies are now engaged in installing commercial units of the process at refineries in this country.

The Standard of New Jersey units will operate with fuel oil under the Bergius patents. In Germany the Bergius process has been developed commercially operating with coal.

The process is simpler and cheaper when liquids are used and there is a higher yield of gasoline, according to Mr. Fieldner. Coal will not give a 100 per cent yield of gasoline because of the ash, oxygen and impurities it contains. By-products can be made from coal, but this is impractical when gasoline is the chief product desired.

Because of the fact that liquids are better adapted to the process, it is likely that coal tar will be used chiefly at first in making gasoline, and Mr. Fieldner does not look for solid coal to be used for hydrogenation for a number of years.

Use High Pressures

In the Bergius process for turning solid coal into gasoline, the coal is heated under pressure of hydrogen, 3,000 pounds to the square inch and at 450 to 480 degrees Centigrade, Mr. Fieldner said. The coal is thus turned into crude oil, 50 to 80 per cent being converted, he said. The crude oil is substantially the same as crude petroleum, and gasoline is made from it.

Hydrogen is necessary in the process, because in the normal bituminous coal the ratio of hydrogen to carbon is approximately 16 to 1, while in petroleum the ratio is about 8 to 1, so that in the conversion of coal to oil it is necessary to double the quantity of hydrogen, according to Mr. Fieldner. The amount of hydrogen required is about 5 per cent of the weight of the coal, and it need not be pure, it was stated.

It is therefore possible to make use of coke-oven gas given off during the last part of a coking period, but, owing to the obvious limitations in tying up a "Berginization" plant with coke production, it is proposed to obtain the necessary hydrogen from the reaction gases of the process itself, according to Mr. Fieldner.

More technically, he says, "the process of liquefaction of coal is cracking the coal molecules with simultaneous absorption of hydrogen; or possibly absorption of hydrogen, followed by splitting up of large molecules into smaller ones, with continued addition of hydrogen." The temperature range favorable to maximum liquefaction is rather narrow, he states, being between 450 and 480 degrees Centigrade for most coals. Higher temperature speeds up the reaction, but a limit is reached at about 480 degrees Centigrade, above which coke is formed. Below 450 degrees Centigrade the rate of reaction is slow and the output of liquid hydrocarbons decreases, according to Mr. Fieldner.

Mixed With Oil

In using large amounts of coal, it is necessary that it be mixed with oil, phenol, or other liquid medium to conduct away exothermic heat of reaction and to prevent overheating of individual coal particles, according to Mr. Fieldner. The liquid medium is also required in the continuous operation of the process to permit pumping of coal into pressure cylinders. Close temperature control can be obtained without use of the liquid in the coal only when experiments are conducted on a very small scale, Mr. Fieldner says.

It has been learned that the younger rank coals, such as brown coal, lignite, and sub-bituminous coal are most completely liquefied in the Bergius process, or leave the smallest amount of residual carbon, it was stated. Anthracites containing more than 85 per cent carbon give very small yields of oil. In other words, Mr. Fieldner says, the highest priced coals, such as anthracite and smokeless semibutuminous, are poor coals for conversion to oil.

The most easily liquefied coals would appear to be the noncoking and subbituminous coals of Illinois, Missouri, Iowa, Colorado, Wyoming, Montana, Utah, Washington, and other western states, while it is probable that the brown lignites of Saskatchewan, the Dakotas

(Continued on Page 148)

J. A. GILMORE RESIGNS; A.O.M.A. DISBANDS

CHICAGO, Nov. 9.—James A. Gilmore, secretary and manager of the American Oil Men's Association, announces his resignation to take effect immediately. Simultaneously with this announcement the association will cease all activities and close its offices. Mr. Gilmore states that the equipment exhibit he was promoting to be held at the Congress Hotel at the same time as the meeting of the American Petroleum Institute at the Hotel Stevens has been abandoned and that all checks and contracts received from intending exhibitors have been mailed back. This was done because Mr. Gilmore was given to understand the A.P.I. did not approve of the holding of this exhibit on the same dates. Mr. Gilmore has not announced his new connection.

MAY WITHDRAW TAX SUITS

SPRINGFIELD, Ill., Nov. 9.—Governor Emerson of Illinois has asked that oil companies withdraw their injunction suits against the state gasoline tax. The fact that these suits are pending has tied up a fund in excess of $1,500,000 which the State desires to use in highway improvement. The request was made at a conference of attorneys representing 93 of the 114 oil companies whose suits are pending.

The Standard Oil Co. of Indiana and the Illinois Petroleum Marketers Association are said to favor the withdrawal of the suits. It is expected that favorable action will be taken by the oil companies.

SELL SKIMMING PLANT

The Weowna Oil Co.'s refinery at Winnett, Mont., was sold for taxes the past week. This is a small skimming plant that was active when the Cat Creek Field was first opened. It made a profit in its early history but during the past few years has not been able to secure enough crude to operate. The equipment was purchased by local oil companies who required tankage and similar material in their drilling operations.

RICHFIELD'S CONTRACTS IN WESTERN DIVISION

NEW YORK, Nov. 11.—The Richfield Oil Co. of New York has acquired an interest in Sherwood Brothers of Philadelphia, Pa., operators of a large chain of service stations controlling 4,000 dealer accounts with annual gasoline volume of 45,000,000 gallons yearly. John Sherwood, president, and other officials will continue to operate the properties. This purchase together with the properties of the Peerless Oil Co. will give the Richfield company a distribution of approximately 70,000,000 gallons in Philadelphia, Baltimore and Scranton.

The Richfield Oil Co. of California has closed a contract with the Southern Pacific Railroad covering a five-year period. The contract, which calls for delivery for the western division, will gross at least 5,000,000 bbls. All deliveries will be made at Los Angeles into railroad-owned equipment.

The Richfield company has also started deliveries on a contract with the Chicago, Milwaukee & St. Paul Railroad for fuel needs for its western division at Spokane, Tacoma and Seattle to gross approximately 3,000,000 bbls. Richfield is furnishing fuel oil to the Harbor Belt Line Railroad, Los Angeles, under which its needs for three years are being supplied, with the company also contracting to erect necessary storage facilities for the Belt Line.

Deliveries by Richfield to the United States Navy of 4,665,000 bbls. of fuel oil at points on the Pacific Coast to June 30, 1930, are also under way, as is the furnishing of oil on a number of pulp and paper mill contracts in the Northwest. With the new railroad contracts just secured, the Richfield company is supplying much of the needs of this class of industry on the Pacific Coast, as it is also delivering approximately 200,000 bbls. of fuel a month to the Union Pacific Railroad, with the present contract in force until the latter part of 1933 with approximately 10,000,000 bbls. yet to be delivered.

HOLD SALES CONFERENCE

CHICAGO, Nov. 9.—A sales conference of the staff of the local office of the Conoco Oil Co. (Continental) and the district managers from the seven surrounding states was held at the Great Northern Hotel. The purpose of the conference was to acquaint the sales force with the new Conoco Germ-Processed motor oils. Present at the conference were J. E. Moorhead, sales promotion manager; Frank Moore, special representative; G. K. Ludwig, marketing engineer, and Ray C. Schrader, chief of aviation sales division. This party arrived from headquarters on the cabin monoplane "Conoco II."

EXPLOSION INJURES THREE

NEW YORK, Nov. 11.—Three men were seriously burned at Secaucus, N. J., with a property damage of $100,000 as the result of an explosion of the motor tanker H. J. Brannigan owned by the Warner-Quinlan Oil Co. The tanker was loaded with 4,500 gallons of gasoline.

ESTABLISH NEW DIVISION

The Vacuum Oil Co. will establish a new sales division for the Rocky Mountain states at Denver, Colo. C. G. Swank, former Milwaukee sales manager of the company, has been appointed general manager of the new division. Branch plants will be established in Colorado, New Mexico and Wyoming.

ROCKY MOUNTAIN AREA

(Continued from Page 116)

tablished geological staffs in Montana, moving them down from Canada. This firm is financed mainly by Denver people and has several officials who are also officials of the Midwest Refining Co.

Pipe Line Runs

Daily average pipe line runs for week ending November 9:

WYOMING	
Salt Creek	30,410
Frannie	.....
Big Muddy	2,210
Oregon Basin	4,400
Byron	.....
Dutton	40
Elk Basin	750
Ferris	20
Grass Creek	2,090
Greybull	10
Hamilton	1,000
LaBarge	2,250
Lance Creek	170
Lost Soldier	2,920
Osage	540
Poison Spider	810
Rock River	2,200
Rex Lake	100
Lander	710
Simpson Ridge	50
Teapot Dome	30
Mule Creek	600
Pilot Butte	.....
Total	51,310
MONTANA	
Cat Creek	1,260
Kevin-Sunburst	6,830
Pondera	2,400
Lake Basin	40
Total	10,580
COLORADO	
Moffat	1,070
Fort Collins	1,890
Florence	730
Iles	1,183
Tow Creek	397
Boulder	25
Rangely	100
Total	5,395
NEW MEXICO	
Artesia	842
Cap Rock (Maljamar)	415
Hogback	400
Rattlesnake	1,630
Table Mesa	114
Total	3,410
Grand total	70,695

SPEED DEVELOPMENT ON TEXAS LEASES

(Continued from Page 38)

lands, of which approximately 250,000 acres are now producing more or less oil. It has under lease at this time, subject to prospecting purposes, approximately 150,000 acres and there remains, subject to lease under the act of 1929, approximately 1,500,000 acres. I learned only a few days ago that leases are now being sold by the University under a "three-year term." It is not my desire to criticize or find fault with any organization. It must be admitted, however, that a policy under which leases are sold for prospective purposes on a three-year basis is diametrically opposed to conservation and sound, sensible business methods. The Federal Government is doing everything it can to defer the development of oil on public lands; whereas, the University of Texas is actually demanding greater activity in the development of oil which is not needed at this time. Under such a policy, the opening of new pools could, and probably would, wreck the entire industry and cause great loss, not only to the producers, but to the State of Texas and its great university. I believe that the regents of your university have not been properly informed on this subject. It is the duty of the Texas division of this Association, as well as the individual operator to do everything possible to have this policy changed. The leases should be for a 10-year period and should contain a clause which will encourage the operators in any pool, wherein the state lands are affected, to unitize such operations. Surely neither the university nor the State of Texas wishes to be party to any wrecking machine, yet the present three-year idea will help to bring about demoralization. It is evident that you gentlemen have been remiss in your duty to properly inform those who have in charge the disposition of these large areas of potential oil lands.

During the first six months of 1929, 27 companies operating in the State of Texas produced 73 per cent of the total production, while over 1,200 other companies and individuals produced 27 per cent. It is obvious that it is of greater importance to the small producer or operator than it is to the larger interests, that the conservation measures now in effect or proposed be promoted. The larger interests are giving every indication of a desire to stabilize the industry. The competitive conditions, with which you are all acquainted, make it imperative that the rank and file do their full duty in these matters in order to bring to a successful conclusion, the efforts toward curtailment in any pool.

The Association needs the support of every member. If each one does his part, better conditions will prevail.

Obeyed Law Says Regent

AUSTIN, Tex., Nov. 9.—Criticism of the oil and gas leasing policy of the board of regents of the University of Texas by E. B. Reeser, president of the American Petroleum Institute, brought a reply from Edward Crane, a regent and chairman of the board for the leasing of university lands. In a telegram to Mr. Reeser, Mr. Crane said:

"You are quoted as saying that the board of regents has not been properly informed as to the Federal Government's conservation policy in respect to the development of the oil on public lands and that the present three-year oil lease form adopted by the board will help bring about demoralization of the Government's conservation policy. The board of regents is entirely conversant with the Government's policy and is in full sympathy therewith. Your statement that the board of regents is a party to a wrecking machine designed to smash conservation because of 'the present three-year idea' is unwarranted and unfair. Had you taken the time to investigate the facts, you would have known that the three-year limit is imposed by the present law as construed by the Attorney General of Texas."

CONSIDER CONSERVATION AT SAN ANGELO, TEX.

(Continued from Page 39)

Oklahoma Division of the association, mentioned various practices, saying a committee of oil men and attorneys had been appointed to study conditions which are harmful to the industry and should be overcome. This committee is now sending out questionnaires to operators and companies, and it is hoped that some methods of betterment may be worked out at an early date.

Ray M. Collins, referred to as "the Oklahoma umpire of the oil industry," followed Mr. Smith, saying the small operators should co-operate with the organizations trying to eliminate evil practices in the industry, for such co-operation will be bound to help them in the long run, and that an equitable plan of development will eventually be worked out for the good of the independents as well as the major companies.

Upon the motion of J. Edgar Pew, the association voted to instruct the new president to name a committee of 10 members to compose the organization's conservation committee. These will be named at a later date.

W. B. Hamilton, president of the West Texas Chamber of Commerce, Wichita Falls, dealt with land titles in Texas, and the big problem which they present in many cases. He said that Texas, as a whole, is bothered by "vacancies," which were forever causing controversies. He is in favor of trying "vacancy strip" cases in the county in which the vacancy is declared existing, instead of at Austin. Such a plan would save the State a great expense in such trials, and no doubt better and satisfactory results could be obtained. Mr. Hamilton also mentioned the bill, to be presented to the next legislature which will give the adjoining land owner the right to purchase the so-called vacancy strip offsetting his land. This plan may also do away with many difficulties encountered now when land is declared to be a vacancy strip.

After the general meeting, the board of directors held their business meeting, electing Edward T. Moore, president of the Simms Oil Co., Dallas, as president of the association for the ensuing year. Some directors were dropped from the list while others were elected to take their places. The directors also gave a vote of thanks to Messrs. Reeser, Davis and Smith for addressing the association.

Edgar V. Marston, Levi Smith, Earl Calloway, John Suman, E. H. Eddleman and K. C. Baker were elected vice presidents. William Massie is treasurer and J. P. Laney is secretary.

At the banquet J. Edgar Pew acted as toastmaster. Lieut. Gov. Barry Miller of Austin defended the State by saying the State and legislature will do their best to aid conservation in Texas, and that practically any law can be passed which will benefit the oil industry and the State. He said the companies will have to co-operate on some plan and bring it before the State, and that a committee going before the legislature with a well planned proposition will get a hearing and have a good chance of getting the plans adopted. "The first thing the companies will have to do is to get together themselves."

Penrose Metcalfe, representative in the lower house from San Angelo, said that measures adopted by oil companies for conservation will undoubtedly be passed by the legislature, and he for one was ready to back any co-operative plan to benefit the industry.

John R. Suman, director and production executive of the Humble Oil & Refining Co., Houston, was winner of the first golf prize at the golf tournament. W. D. Holcombe, San Angelo, won the Hamilton trophy given by Mr. Hamilton of Wichita Falls. The third prize went to Harry Maxwell, and the fourth prize, or "crapshooters" trophy, went to F. J. Adams, general agent of the Gulf Production Co., Fort Worth.

UNIT OPERATION IS ONLY PERMANENT CURE

(Continued from Page 38)

around new drilling projects and to limit their assistance thereto to areas where there had been effected some form of unitization or pooling which would permit control of development in the event production was found. This program has been largely adhered to by most of the principal operators in those two States and I believe it has been followed to a considerable extent in Texas. However, the immense amount of spread and checkerboard acreage already owned, producing a constant chain of expiring leases in areas of divided ownership, has been the source of some exceptions to the rule made because of real or fancied reciprocal obligations. At a recent meeting of the directors of the Kansas-Oklahoma division, adherence to this program was reaffirmed, and, as president of the general Mid-Continent Oil & Gas Association, I was requested to undertake to promote its more universal adoption and to crystallize and strengthen its application. A committee of lawyers and representatives of land departments is now at work to devise a more definite code of practice and universal form or forms of contract for unitization, and it is hoped that the report of this committee can be presented to the directors of the general Mid-Continent Oil & Gas Association at its annual meeting the latter part of this month. It is also hoped that the action of the directors at that time will be of such character that a definite program for carrying on this policy can be presented to the directors of the American Petroleum Institute at its annual meeting in Chicago, early in December.

The welfare of the producing industry as a whole is essential to the continued prosperity of each individual producing unit, and I wish to urge that everyone turn their attention seriously to the unitization program and lend their fullest efforts and co-operation to its attainment. I hope that the Texas division of the Mid-Continent Oil & Gas Association, appreciating the importance of this movement, will lend to it its wholehearted and enthusiastic support.

STEADY TONE RULES IN EASTERN MARKETS

(Continued from Page 135)

the Gulf Coast is expected to be reflected in a broader demand for export gasoline and naphtha in the East Coast area over the balance of the year. There is a fair inquiry in this area reported this week, and the comparative stability of the market is expected to make for a fair demand during the current month. Practically all of this demand, however, is for cased stocks and bulk motor fuels in less than cargo lots. Increasing interest is likewise being shown by export operators in offerings of Pennsylvania cylinder stocks, and the trade is of the opinion that larger sales of these lubs for shipment abroad will be witnessed before the end of the month.

California Oil Receipts

Receipts of California crude and refined oils at Atlantic and Gulf Coast ports for the week ended November 2 totaled 512,000 bbls., a daily average of 73,142 bbls., as compared with 661,000 bbls., a daily average of 94,429 bbls. for the previous week. Details follow:

At Atlantic Coast Ports	Bbls. of 42 gals.
Baltimore	121,000
New York	266,000
Others	70,000
Total	457,000
Daily average	65,285
At Gulf Coast Ports—	
Total	55,000
Daily average	7,857
At Atlantic and Gulf Coast Ports—	
Total	512,000
Daily average	73,142

Distribution of total California oil receipts is as follows:

Gasoline	341,000
Kerosene	70,000
Gas oil	11,000

Imports

Imports of crude and refined petroleum at the principal ports for the week ended November 2 totaled 2,066,000 bbls., a daily average of 295,142 bbls., compared with 2,388,000 bbls., a daily average of 341,142 bbls. for the week ended October 26. Details follow:

At Atlantic Coast Ports—	Bbls. of 42 gals.
Baltimore	296,000
Boston	202,000
New York	906,000
Philadelhia	280,000
Others	102,000
Total	1,786,000
Daily average	255,142
At Gulf Coast Ports—	
Galveston district	66,000
New Orleans & Baton Rouge	39,000
Port Arthur & Sabine district	135,000
Tampa	40,000
Total	280,000
Daily average	40,000
At all United States Ports—	
Total	2,066,000
Daily average	295,142

An increasingly large percentage of imports is represented by gasoline, import totals of which have shown a steady growth during the past few months. The greater part of this gasoline is moving into the United States through Atlantic Coast ports, although isolated shipments to the Gulf are also reported. Practically all of this motor fuel is coming in from Aruba, D.W.I., and Curacao, and is going into distribution in the Atlantic Coast area, mainly in the New York and New England territories, although some of this gasoline is finding its way into the South Atlantic marketing territory, being distributed principally through Baltimore for consumption in that area.

East Coast refineries are now drawing a fairly large proportion of their crude oil supplied from South America, and this heavy movement is expected to continue until Venezuelan producers get together in some sort of conservation program similar to that which is now becoming effective in the United States.

OIL SAMPLES SHOWN

CHATHAM, Ontario, Nov. 9.—Samples of crude naphtha and crude oil from the various Alberta fields are being shown at Produced in Canada Exhibition at Montreal.

REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement unless otherwise noted.

GASOLINE AND NAPHTHA

	Nov. 12		Nov. 5		Oct. 29	
OKLAHOMA (Group 3)—						
50-52 450 endpoint	.07	.07¼	.07	.07¼	.07	.07½
56-58 450 endpoint	.06¾	.07¼	.06¾	.07¼	06¾	.07¼
*58-60 437 endpoint (U. S. Motor)	.0748		.0747		.0761	
*60-62 437 endpoint	†.07½	.0775	.0775		†.0775	
*60-62 400 endpoint	†.07½	.0775	.0788		.0785	
*64-66 375 endpoint	†.07⅞	.0825	.0825		†.08	
68-70 360 endpoint	.08	.08¼	.08	.08¼	.08	.08¼
64-66 437 endpoint (blend)	.07¼	.07½	.07¼	.07½	.07¼	.07½

*Weighted average prices November 11, 4 and October 28 as reported by representative refiners. Sales to jobbers only. †No sales reported.

NORTH TEXAS—						
56-58 450 endpoint	.06¾	.07	.06¾	.07	.06¾	.07
58-60 460 endpoint	.06¾	.07	.06¾	.07	.06¾	.07
58-60 437 endpoint (U. S. Motor)	.06⅞	.07¼	.06⅞	.07¼	.06⅞	.07¼
60-62 400 endpoint	.07¼	.07⅜	.07¼	.07⅜	.07¼	.07⅜
64-66 390 endpoint	.07½	.07¾	.07½	.07⅝	.07½	.07⅝
64-66 375 endpoint	.07⅞	.08	.07¾	.08	.07¾	.08
68-70 360 endpoint	.08	.08¼	.08	.08¼	.08	.08¼
64-66 437 endpoint (blend)	.07¼	.07½	.07¼	.07½	.07¼	.07½
***NORTH LOUISIANA—**						
58-60 437 endpoint (U. S. Motor)	.07⅝		.07⅝		.07½	.07⅝
***ARKANSAS—**						
58-60 437 endpoint (U. S. Motor)	.07⅝		.07⅝		.07½	.07⅝
PENNSYLVANIA—						
52-54 Naphtha	.07¾	.08	.07¾	.08	.07¾	.08
54-56 Naphtha	.07¾	.08	.07¾	.08	.07¾	.08
58-60 Gasoline	.08¼	.08½	.08½	.09	.08½	.09
60 Gasoline	.08¾	.09	.08¾	.09	.08¾	.09
62 Gasoline	.08¾	.09	.08⅞	.09	.08⅞	.09
64 Gasoline	.09¼	.09½	.09¼	.09½	.09¼	.09½
68-70 350 endpoint gasoline	.10¼	.10½	.10¼	.10½	.10¼	.10½
CALIFORNIA—						
58-60 437 endpoint (U. S. Motor) domestic	.09	.10	.09	.10	.09	.10
CHICAGO DISTRICT (Based on Group 3)—						
50-52 450 endpoint (Naphtha)	.07	.07¼	.07	.07¼	.07	.07½
56-58 450 endpoint	.06⅞	.07¼	.07	.07¼	.06⅞	.07½
58-60 437 endpoint (U. S. Motor)	.06¾	.07½	.07	.07½	.07	.07½
60-62 400 endpoint	.07⅜	.07¾	.07⅜	.07¾	.07⅝	.07¾
64-66 375 endpoint	.07⅞	.08⅛	.07⅞	.08⅛	.07⅞	.08⅛
68-70 360 endpoint	.08	.08¼	.08	.08¼	.08⅜	.08½
64-66 437 endpoint (blend)	.07	.07¼	.07¼	.07½	.07¼	.07½
GULF COAST (Export)—						
58-60 (U. S. Motor)	.08½		.08½		.08½	
60-62 400 endpoint	.09½		.09½		.09½	
61-63 390 endpoint	.09¾		.09¾		.09¾	
64-66 375 endpoint	.10		.10		.10	

*Louisiana, Arkansas, Mississippi and East Texas delivery.

NATURAL GASOLINE

	Nov. 12		Nov. 5		Oct. 29	
OKLAHOMA (Group 3)—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.06½	.06⅝	.06⅝	.06¾	.06¾	
Grade AA, 80-87.9, 375 e.p., rec. 90%	.06½	.06⅝	.06⅝	.06¾	.06¾	
Grade B, 76-83.9, 375 e.p., rec. 85%	.06⅜	.06½	.06½	.06⅝	.06⅝	.06¾
Grade BB, 84-92, 375 e.p., rec. 85%	.06⅜	.06½	.06½	.60⅝	.06⅝	.06¾
Grade C, 80-90, 375 e.p., rec. 78%	.06¼	.06⅜	.06½		.06½	.06⅝
NORTH TEXAS—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.06½	.06⅝	.06⅝	.06¾	.06¾	
Grade AA, 80-87.9, 375 e.p., rec. 90%	.06½	.06⅝	.06⅝	.06¾	.06¾	
Grade B, 76-83.9, 375 e.p., rec. 85%	.06⅜	.06½	.06½	.06⅝	.06⅝	.06¾
Grade BB, 84-92, 375 e.p., rec. 85%	.06⅜	.06½	.06½	.60⅝	.06⅝	.06¾
Grade C, 80-90, 375 e.p., rec. 78%	.06¼	.06⅜	.06½		.06⅝	
NORTH LOUISIANA—						
Grade AA, 80-87, 375 e.p., rec. 90%	.07	.07¼	.07	.07¼	.07	.07¼
Grade BB, 84-92, 375 e.p., rec. 85%	.07		.07		.07	
Grade C, 80-90, 375 e.p., rec. 78%	.07		.07		.07	
CALIFORNIA—						
75-78 375-390 endpoint	.07¾	.08¼	.07¾	.08¼	.07¾	.08¼
CHICAGO DISTRICT (Based on Group 3)—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.06⅝		.06¾		.06¾	
Grade AA, 80-87.9, 375 e.p., rec. 90%	.06⅝		.06¾		.06¾	
Grade B, 76-83.9, 375 e.p., 85%	.06½		.06¾		.06¾	
Grade BB, 84-92, 375 e.p., rec. 85%	.06½		.06⅝		.06⅝	
Grade C, 80-90, 375 e.p., rec. 78%	.06½		.06⅝		.06⅝	

BURNING OIL

	Nov. 12		Nov. 5		Oct. 29	
OKLAHOMA (Group 3)—						
41-43 water white kerosene	.04⅝	.05	.04¾	.05¼	.04¾	.05¼
42-44 water white kerosene	.05	.05½	.05¼	.05¾	.05¼	.05¾
NORTH TEXAS—						
41-43 water white kerosene	.04½	.04⅝	.04½	.04⅝	.04½	.04¾
40-42 water white kerosene	.04⅞	.04⅝	.04¼	.04⅝	.04⅝	.04½
***NORTH LOUISIANA—**						
41-43 water white kerosene	.05½		.05½		.05½	
***ARKANSAS—**						
41-43 water white kerosene	.05½		.05½		.05½	
PENNSYLVANIA—						
43 Kerosene prime white	.06¾	.07	.06¾	.07	.06¾	.07
45 Kerosene water white	.07	.07¼	.07	.07¼	.07	.07¼
46 Kerosene water white	.07	.07¼	.07	.07¼	.07	.07¼
47 Kerosene water white	.07¼	.07½	.07¼	.07½	.07¼	.07½
300 Mineral Seal	.07	.07¼	.07	.07¼	.07¼	.07½
CALIFORNIA—						
38-40 water white Kero. (high-burning test)			.05	.05½	.05	.05½
Engine distillate, 43-44, 445 endpoint	.07	.07½	.07	.07½	.07	.07½
Engine distillate, 42-44, 480 endpoint	.06¾	.07¼	.06¾	.07¼	.06¾	.07¼
CHICAGO DISTRICT (Based on Group 3)—						
41-43 water white kerosene	.04½	.05	.04⅝	.05	.04⅝	.05
42-44 water white kerosene	.05	.05½	.05	.05¼	.05⅛	.05¼
GULF COAST (Export)—						
41-43 prime white	.07		.07		.07	
41-43 water white	.08		.08		.08	

*Louisiana, Arkansas, Mississippi and East Texas delivery.

FUEL OIL

	Nov. 12		Nov. 5		Oct. 29	
OKLAHOMA (Group 3)—						
Below 18 Fuel Oil, per bbl.	.65	.67½	.62½	.65	.60	.65
18-22 Fuel Oil, per bbl.	.67½	.72½	.65	.70	.65	.70
20-22 Fuel Oil, per bbl.	.70	.75	.70	.75	.67½	.72½
22-26 Fuel Oil, per bbl.	.75	.80	.75	.80	.75	.80
24-26 Fuel Oil, per bbl.	.80	.90	.80	.85	.80	.85
26-30 Fuel Oil, per bbl.	.90	1.00	.90	1.00	.90	1.00
28-30 Fuel Oil, per bbl. (industrial)	1.10	1.20	1.10	1.20	1.10	1.15
32-36 Gas Oil (industrial)	.02¾	.03	.03	.03⅛	.03	.03⅛
32-36 Gas Oil (straw color)	.03⅛	.03¼	.03⅛	.03¼	.03⅛	.03¼
36-38 Distillate	.03⅝	.03⅞	.03⅝	.03⅞	.03⅞	.04⅛
38-40 Straw Distillate	.03¾	.04¼	.03¾	.04¼	.04	.04¼
NORTH TEXAS—						
Below 20 Fuel Oil, per bbl.	.60	.65	.60	.65	.60	.65
24-26 Fuel Oil, per bbl.	.75	.80	.70	.75	.70	.75
32-36 Gas Oil (straw)	.02¾	.03	.02⅞	.03⅛	.02⅞	.03⅛
38-40 Straw Distillate	.03¾	.04⅛	.03¾	.04⅛	.04	.04⅛
***NORTH LOUISIANA—**						
18-20 Fuel Oil, per bbl.	.80	.90	.80	.90	.80	.90
30-32 Gas Oil	.03½	.03¾	.03½	.03¾	.03½	.03¾
***ARKANSAS—**						
33-36 Distillate	.03⅝	.04	.03⅝	.04	.03¾	.04
30-32 Gas Oil	.03¼	.03¾	.03¼	.03¾	.03½	.03¾
16-22 Refinery Fuel Oil, per bbl.	.80	.90	.80	.90	.80	.90
GULF COAST (South Texas)—						
Gas Oil	.04	.04¼	.04	.04¼	.04	.04¼
Bunker C Fuel (cargo lots), per bbl.	.75		.75		.75	
Bunker C Fuel (small lots)	1.00	1.05	1.00	1.05	1.00	1.05
PENNSYLVANIA—						
30-34 Fuel Oil	.04½	.04¾	.04½	.04¾	.04½	.04¾
36-40 Fuel Oil	.04¾	.05	.04¾	.05	.04¾	.05
CALIFORNIA—						
33-36 Distillate	.03½	.04	.03½	.04	.03½	.04
26-32 Distillate	.02	.02½	.02	.02½	.02	.02½
15-20 Fuel Oil, Bunker (at tide water)	.65	.85	.65	.85	.65	.85
15-20 Fuel Oil (cargo lots), per bbl.	.70	.85	.70	.85	.70	.85
27 plus Diesel, per bbl.	.90	1.05	.90	1.05	.90	1.05
CHICAGO DISTRICT (Based on Group 3)—						
22-26 Fuel Oil, per bbl.	.77½	.85	.77½	.85	.77½	.82½
18-22 Fuel Oil, per bbl.	.70	.75	.70	.75	.67½	.72½
28-30 Fuel Oil, per bbl.	1.15	1.20	1.12½	1.17½	1.10	1.15
32-36 Gas Oil (zero)	.03⅛	.03¼	.03⅛	.03¼	.03⅛	.03¼
32-36 Gas Oil (industrial)	.02⅞	.03⅛	.02⅞	.03⅛	.03	.03⅛
36-38 Distillate	.03½	.03¾	.03½	.03¾	.03½	.03¾
38-40 Straw Distillate	.03¾	.04	.03¾	.04	.03¾	.04

*Louisiana, Arkansas, Mississippi and East Texas delivery.

LUBRICATING OIL AND WAX

	Nov. 12		Nov. 5		Oct. 29	
OKLAHOMA (Group 3)—						
100 vis., 2 color, 20-25 cold test	.06¾	.07	.06¾	.07	.06¾	.07
100 vis., 3 color, 20-25 cold test	.05¾	.06	.05¾	.06	.05¾	.06
150 vis., 3 color, 20-25 cold test	.07¾	.08	.07¾	.08	.07¾	.08
150 vis., 4 color, 20-25 cold test	.07½	.07¾	.07½	.07¾	.07½	.07¾
185 vis., 3 color, 23-28 cold test	.09¼	.09½	.09¼	.09½	.09¼	.09½
180 vis., 4 color, 23-28 cold test	.08¾	.09	.08¾	.09	.08¾	.09
180 vis., 5 color, 23-28 cold test	.08½	.08¾	.08½	.08¾	.08½	.08¾
200 vis., 3 color, 23-28 cold test	.09¾	.10	.09¾	.10	.09¾	.10
200 vis., 4 color, 23-28 cold test	.09¼	.09½	.09¼	.09½	.09¼	.09½
200 vis., 5 color, 23-28 cold test	.08¾	.09	.08¾	.09	.08¾	.09
240 vis., 3 color, 25-30 cold test	.13¼	.13½	.13¼	.13½	.13¼	.13½
240 vis., 4 color, 25-30 cold test	.12¼	.12½	.12¼	.12½	.12¼	.12½
240 vis., 5 color, 25-30 cold test	.11¾	.12	.11¾	.12	.11¾	.12
280 vis., 3 color, 25-30 cold test	.15¾	.16	.15¾	.16	.15¾	.16
280 vis., 4 color, 25-30 cold test	.14¾	.15	.14¾	.15	.14¾	.15
280 vis., 5 color, 25-30 cold test	.13¾	.14	.13¾	.14	.13¾	.14
Cylinder Stocks:						
600, steam refined, light green	.10	.12	.10	.12	.10½	.12
600, steam refined, dark green	.09	.11	.09	.11	.09½	.11
190-200 vis., D color Bright Stock	.41	.42	.41	.42	.41	.42
150-160 vis., D color Bright Stock	.37		.37		.37	
150-160 vis., E color Bright Stock	.32	.35	.32	.35	.33	.35
Waxes:						
124-126 White Crude Scale Wax	.03	.03⅛	.03		.03	
PENNSYLVANIA—						
34 Neutral	.07½	.07¾	.07½	.07¾	.07½	.07¾
34 Sundebloom	.07½	.07¾	.07½	.07¾	.07½	.07¾
36 Miners' Neutral	.07¼	.07½	.07¼	.07½	.07¼	.07½
150, 3 color	.15½	.16	.15½	.16	.15½	.16
180, 3 color	.21½	.22	.21½	.22	.21½	.22
200, 3 color	.24½	.25	.24½	.25	.24½	.25
220, 3 color	.28½	.29	.28½	.29	.28½	.29
600, steam refined	.26½	.27	.26½	.27	.26½	.27
635, steam refined	.29½	.30	.29½	.30	.29½	.30
650, steam refined	.30½	.31	.30½	.31	.30½	.31
600, Pennsylvania Flash	.31½	.32	.31½	.32	.31½	.32
630, Pennsylvania Flash	.36	.36½	.36	.36½	.36	.36½
600, E filtered	.33	.33½	.33	.33½	.33	.33½
600, D filtered	.36½	.37	.36½	.37	.36½	.37
Pennsylvania Bright Stock	.49	.50	.50	.51	.50	.51
*122-124 White Crude Scale Wax	.03¼	.03½	.03¼	.03½	.03¼	.03½
*124-126 White Crude Scale Wax	.03¼	.03½	.03¼	.03½	.03¼	.03½

*At New York.

GULF COAST (South Texas)—						
No. 2 color, 100 vis., pale oil	.05¾	.06½	.05¾	.06½	.05¾	.06½
No. 3 color, 200 vis., pale oil	.09		.09		.09	
No. 3, 300 vis., pale oil	.09¾	.10	.09¾	.10	.09¾	.10
No. 3½ color, 500 vis., pale oil	.11	.11½	.11	.11½	.11	.11½
No. 4 color, 750 vis., pale oil	.12	.13	.12	.13	.12	.13
No. 5 to 6 color, 200 vis., red oil	.07½	.08	.07½	.08	.07½	.08
No. 5 to 6 color, 300 vis., red oil	.08½		.08½		.08½	
No. 5 to 6 color, 500 vis., red oil	.09	.10	.09	.10	.09	.10
No. 5 to 6 color, 750 vis., red oil	.11¼	.11½	.11¼	.11½	.11¼	.11½
No. 2½ color, 200 vis., pale filtered	.11	.12	.11	.12	.11	.12
No. 2½ color, 300 vis., pale filtered	.12	.13	.12	.13	.12	.13

REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement unless otherwise noted.

No. 2½ color, 500 vis., pale filtered	.14½	.15	.14½	.15	.14½	.15
No. 2½-3 color, 750 vis., pale filtered	.17	.19	.17	.19	.17	.19
CALIFORNIA—						
130 vis., 2½3 color	.10¼	.10½	.10¼	.10½	.10¼	.10½
200 vis., 2½-3 color	.11½	.11¾	.11½	.11¾	.11½	.11¾
300 vis., 3-3½ color	.13	.13½	.13	.13½	.13	.13½
350 vis., 3½-4 color	.13½	.13¾	.13½	.13¾	.13½	.13¾
400 vis., 3½-4 color	.15	.15½	.15	.15½	.15	.15½
Red Neutral:						
200 vis., 4½-5 color	.11	.11¼	.11	.11¼	.11	.11¼
300 vis., 5-6 color	.12	.12¼	.12	.12¼	.12	.12¼
400 vis., 5-6 color	.13¼	.14	.13¼	.14	.13¼	.14
500 vis., 4½-5 color	.14¼	.15½	.14¼	.15½	.14¼	.15½
500 vis., 5-6½ color	.15	.15¼	.15	.15¼	.15	.15¼
600 vis., 6½ plus color	.16	.16¼	.16	.16¼	.16	.16¼

Note—Bright stocks are not manufactured commercially on the Pacific Coast.

NEW YORK (BAYONNE) REFINERY PRICES

	Nov. 12		Nov. 5		Oct. 29	
Gasoline, U. S. Motor, 58-60, 437	.08¾	.09	.08¾	.09	.08¾	.09
Kerosene, water white, 41-43	.07¾		.07¾		.07¾	
*Fuel Oil, Bunker "C," 14-16, per bbl.	1.05		1.05		1.05	
†Fuel Oil, Diesel, 28-30, per bbl.	2.00		2.00		2.00	
Gas Oil, 32-36 gravity	.05¼		.05¼		.05¼	
25 pale Paraffin Oil	.10½		.10½		.10½	
32 pale Paraffin Oil	.07¼		.07¼		.07¼	
285 red Paraffin Oil	.12½		.11½		.11½	
250 red Paraffin Oil	.11½		.11		.11	
225 red Paraffin Oil	.10		.09½		.09½	
250 red Paraffin Oil	.09¼		.09		.09	
Refined Wax:						
120-122 a.m.p., per lb.	.04		.04		.04½	
125-127 a.m.p., per lb.	.04½		.04¼		.04⅜	
130-132 a.m.p., per lb.	.04⅞		.05⅜		.05½	
133-135 a.m.p., per lb.	.05⅞		.06		.06⅛	
135-137 a.m.p., per lb.	.06¼		.06¼		.06¼	
Petrolatum in barrels, carload lots, per pound:						
Dark Green	.01⅞		.01⅞		.01⅞	
Amber	.03½		.03½		.03½	
Extra Amber	.03⅝		.03⅝		.03⅝	
Cream	.06⅜		.06⅜		.06⅜	
Lily White	.07⅜		.07⅜		.07⅜	
Snow White	.08⅜		.08⅜		.08⅜	

*Lighterage 5.0 cents a barrel extra. †Lighterage 6.5 cents a barrel extra.

NEW YORK (BAYONNE) EXPORT PRICES

	Nov. 12		Nov. 5		Oct. 29	
Kerosene, prime white	.07¾		.07¾		.07¾	
Kerosene, water white	.09		.09		.09	
600, steam refined cylinder stocks, in bbls.	.33		.30½		.30½	
635, steam refined	.35		.32½		.32½	
650, steam refined	.39		.36½		.36½	
600, Pennsylvania Flash	.43		.43		.43	
630, Pennsylvania Flash	.47		.47		.47	
600, Warren E	.40½		.41		.42	
600, Oil City, E	.39½		.40		.41	
Light 140-150 Bright Stocks	.59	.60	.59	.60	.60	.61
Dark 140-150 Bright Stocks	.57	.58	.57	.58	.58	.59

LOS ANGELES EXPORT PRICES

	Nov. 12		Nov. 5		Oct. 29	
Kerosene, water white	.04½	.05	.04½	.05	.04½	.05
U. S. Motor Gasoline, 53-55 437 e.p.	.06¼	.06¾	.06¼	.06¾	.06¼	.06¾

CRUDE OIL PRICES

OKLAHOMA, KANSAS, NORTH AND EAST CENTRAL TEXAS

Corsicana heavy (January 11)* ..... $ .80
Other fields ..... See gravity table

*Posted by Magnolia Petroleum Co.

TEXAS PANHANDLE

Gray County, Wheeler County and Carson-Hutchinson Counties—See gravity table.

WEST TEXAS

Iatan* ..... Same as North Texas
Crane-Upton-Crockett, Pecos, Winkler, Mitchell and Glasscock—See gravity table
Chalk† ..... $ .65

*Includes Howard County and Westbrook Fields.
†Posted by Humble Oil & Refinery Co.

ARKANSAS-NORTH LOUISIANA

Smackover, below 24 gravity (May 20, 1929) ..... $ .85
Smackover, 24 gravity and above (May 20, 1929) 1.00
Cotton Valley, below 36 gravity (May 22) ..... .85
Bellevue (May 29, 1929) 1.30
Urania (May 21, 1929) 1.01
East El Dorado (May 22, 1929) ..... .85
Other fields ..... See gravity table

Cotton Valley crude about 36 gravity takes same gravity price schedule as shown for North Louisiana and Arkansas crude in Mid-Continent gravity price table.

Note—Smackover, Cotton Valley and Bellevue posted by Standard Oil Co. of Louisiana and Magnolia Petroleum Co.; Urania posted by Louisiana Oil Refining Corp.; East El Dorado, Magnolia Petroleum Co.

GULF COAST

Grade A (May 20)* $1.30
Grade B ..... See gravity table
Jennings, La. (March 14)† 1.05
Saratoga, Batson, Dayton (March 14, 1927)‡ 1.20
Refugio¶ ..... .70
Markham (March 14)‖ 1.00
High Island (December 14)¶ 1.00

*Humble Oil & Refining Co., The Texas Company, Gulf Pipe Line Co., and Sun Pipe Line Co. †Gulf Pipe Line Co. ‡Sun Pipe Line Co. §The Texas Company. ¶Posted by Gulf Pipe Line Co.

ROCKY MOUNTAIN STATES
Ohio Oil Co.-Midwest Refining Co.
(Effective May 21, 1929)

Rock Creek, Wyo. $1.40
Salt Creek ..... See gravity table
Big Muddy $1.43
Grass Creek, heavy (July 27, 1928) ..... .90
Grass Creek, light 1.65
Mule Creek 1.20
Elk Basin 1.65
Lance Creek 1.68
Poison Spider (March 14, 1927) 1.00
Notches (March 14, 1927) ..... .65
Rex Lake (February 22) 1.10
Osage 1.65
Lost Soldier (contract, May 22) 1.05
Hamilton Dome (March 14, 1927) ..... .85
Pedro 1.25
Greybull 1.65
Four Bear ..... .85
Cat Creek (Montana) (July 27, 1928) 1.48
Sunburst (Montana) (May 23, 1929) 1.75
Torchlight 1.65
Hogback (New Mexico) 1.70

Note—Salt Creek, Osage, Cat Creek, Greybull and Hogback posted by Midwest Refining Co., and the remainder by the Ohio Oil Co. Both companies post Grass Creek light and Elk Basin.

SOUTH CENTRAL AND SOUTHWESTERN TEXAS

Luling (May 2)* ..... $ .90
Mirando (May 20, 1929)† ..... .90
Salt Flat (May 20, 1929)§ 1.25
Rockdale Minerva (April 15)
Below 28 gravity 1.25
28-38.9 gravity 1.27

(Continued on Page 142)

CRUDE OIL GRAVITY TABLE

Gravity	1	2	3	4	5	6	7	8	9	10
	Okla., Kans. & N. C. Texas	No. La. and Arkansas	Crane, Upton, Crockett, Winkler, Howard, Pecos, and Lea, N. Mex.	Stephens, Ark.	Wheeler (Texas Panhandle)	Gray County (Texas Panhandle)	Carson and Hutchinson (Texas Panhandle)	Salt Creek, Wyo.	Grade B and Light Crude (S. Coast)	Somerset (South Central Texas)
24 and above	....	....	....	....	....	....	....	....	....	....
Below 24	....	....	....	....	....	....	....	....	....	....
Below 25	.85	....	.70	....	....	....	....	....	1.15	....
25 to 25.9	.90	....	.74	....	....	....	....	....	1.18	....
26 to 26.9	.95	....	.78	....	....	....	....	....	1.21	....
27 to 27.9	1.00	....	.82	....	....	....	....	....	1.24	....
Below 28	....	1.00	....	.90	.90	.90	.90	....	....	....
28 to 28.9	1.05	1.05	.86	.94	.90	.90	.90	....	1.27	....
29 to 29.9	1.10	1.10	.90	.98	.90	.95	.90	1.10	1.30	....
30 to 30.9	1.15	1.15	.94	1.02	.95	1.00	.90	1.15	1.33	....
31 to 31.9	1.20	1.20	.98	1.06	1.00	1.05	.90	1.20	1.36	....
32 to 32.9	1.25	1.25	1.02	1.10	1.05	1.10	.95	1.25	1.39	1.05
33 to 33.9	1.30	1.30	1.06	....	1.10	1.15	1.00	1.30	1.42	1.07
34 to 34.9	1.35	1.35	1.10	....	1.15	1.20	1.05	1.35	1.45	1.09
35 to 35.9	1.40	1.40	1.14	....	1.20	1.25	1.10	1.40	1.48	1.11
36 to 36.9	1.45	1.45	1.18	....	1.25	1.30	1.15	1.45	....	1.13
37 to 37.9	1.50	1.50	....	....	1.30	1.35	1.20	1.50	....	1.15
38 to 38.9	1.55	1.55	....	....	1.35	1.40	1.25	....	....	1.17
39 to 39.9	1.60	1.60	....	....	1.40	1.45	1.30	....	....	....
40 to 40.9	1.65	1.65	....	....	1.45	1.50	1.35	....	....	....
41 to 41.9	1.70	1.70	....	....	1.50	1.55	1.40	....	....	....
42 to 42.9	1.75	1.75	....	....	1.55	1.60	1.45	....	....	....
43 to 43.9	1.80	1.80	....	....	1.60	1.65	1.50	....	....	....
44 and above	1.85	1.85	....	....	1.65	1.70	1.55	....	....	....

Column 1, Note—Magnolia Petroleum Co. posted schedule May 20, 1929, making price below 26 gravity 70 cents per barrel, 26-26.9 gravity 75 cents, 27-27.9 gravity 85 cents, 28-28.9 gravity 90 cents, 29-29.9 gravity 95 cents, 30-30.9 gravity $1.05, and 31-31.9 gravity $1.15, with balance of the price schedule as shown above.

Oklahoma—Carter Oil Co., Prairie Oil & Gas Co., Sinclair Oil & Gas Co., Gypsy Oil Co., The Texas Company, May 20.

North Central Texas—Including Ranger, Mexia, Powell, Richland, Wortham, Lytton Springs, Currie, Nocona and Moran, Prairie Oil & Gas Co., Sinclair Oil Refining Co., Humble Oil & Refining Co., The Texas Company and Gulf Refining Co., May 20.

Kansas—Prairie, Sinclair, The Texas Company and Carter, May 20.

Column 2—Arkansas and North Louisiana—(Caddo, Bull Bayou, Crichton, Cotton Valley, above 36 gravity, DeSoto, Haynesville, Homer and El Dorado only) May 22, Standard Oil Co. of Louisiana, Louisiana Oil Refining Co., Gulf Refining Co., Magnolia Petroleum Co., schedule applies to Pine Island, Haynesville, Bull Bayou, Louisiana and El Dorado, Ark., light crude.

Column 3—Humble Oil & Refining Co. and Magnolia Petroleum Co., May 20.

Column 4—Atlantic Oil Producing Co., Prairie Oil & Gas Co., Louisiana Oil Refining Corp., May 21, 1929.

Columns 5, 6 and 7—Humble Oil & Refining Co., Magnolia Petroleum Co., May 20, 1929.

Column 8—Midwest Refining Co., May 20, 1929. All crude over 37 gravity $1.50 per barrel.

Column 9—Humble Oil & Refining Co., May 20, 1929 (schedule ends 35 and above).

Column 10—Grayburg Pipe Line Co. and Pioneer Oil & Refining Co., April 7.

CALIFORNIA CRUDE OIL PRICES
Standard Oil Co.-Union Oil Co. (Effective October 21, 1929)

Gravity—	1 Salt Lake, Newport, Summerland, Lawndale, Los Angeles, Fullerton, Olinda-Brea, Santa Fe Springs, Alamitos Heights, Huntington Beach, Signal Hill (Nov. 8) Athens, Inglewood, Rosecrans-Dominguez, Watsonville	2 Whittier, La Habra, Coyote Hills	3 Midway-Sunset, Elk Hills, Lost Hills, Fairfax, Buena Vista Hills	4 Montebello	5 Santa Fe Springs (Nov. 8)	6 Santa Maria, Coalinga	7 Wheeler Ridge, Fruitvale	8 Circuit, Ventura, Rincon	9 Ventura Ave.* Potrero†	10 Elwood Terrace	11 Seal Beach (Nov. 4)
14 to 14.9	.70	.70	.50	.70	....	.50	.50	.65	.40	....	.70
15 to 15.9	.70	.70	.50	.70	....	.50	.50	.65	.40	....	.70
16 to 16.9	.70	.70	.50	.70	....	.50	.50	.65	.40	....	.70
17 to 17.9	.70	.70	.50	.70	....	.50	.50	.65	.40	....	.70
18 to 18.9	.75	.75	.56	.70	....	.56	.56	.70	.40	....	.75
19 to 19.9	.80	.80	.62	.75	....	.62	.62	.70	.40	....	.80
20 to 20.9	.85	.84	.68	.80	....	.68	.68	.70	.40	....	.85
21 to 21.9	.89	.88	.74	.85	.89	.74	.74	.86	.40	....	.89
22 to 22.9	.93	.91	.80	.90	.92	.80	.80	.87	.40	....	.93
23 to 23.9	.97	.94	.85	.95	.95	.85	.85	.90	.40	....	.97
24 to 24.9	1.01	.97	.90	.98	.98	.88	.88	.94	.40	....	1.01
25 to 25.9	1.05	1.00	.95	1.01	1.01	.91	.91	.98	.60	....	1.05
26 to 26.9	1.09	1.04	1.00	1.04	1.04	.94	.94	1.02	.60	....	1.09
27 to 27.9	1.13	1.08	1.05	1.07	1.07	.98	.97	....	.60	....	1.13
28 to 28.9	1.17	1.12	1.10	1.10	1.10	1.02	....	....	.60	....	1.17
29 to 29.9	1 21	1.16	1.16	1.13	1.15	1.06	....	....	.60	....	1 21
30 to 30.9	1.25	1.20	1.22	1.16	1.20	1.10	....	..	.60	....	1.25
31 to 31.9	1.30	....	1.28	....	1.25	1.14	....	....	.60	....	1.30
32 to 32.9	1.35	....	1.34	....	1.30	1.18	..	....	.60	....	1.35
33 to 33.9	1.41	....	1.40	....	1.35	1.22	....	....	.60	....	....
34 to 34.9	1.47	....	1.46	....	1.40	1.26	....	....	.60	1.16	....
35 to 35.9	1.53	....	....	....	1.45	1.30	....	....	.60	1.22	....
36 to 36.9	1.59	....	....	....	1.50	....	....	....	.60	1.28	....
37 to 37.9	1.65	....	....	....	1.55	....	....	....	.60	1.34	....
38 to 38.9	1.71	....	....	....	1.60	....	....	....	.60	1.40	....
39 to 39.9	1.77	....	....	....	1.65	....	....	....	.60	1.46	....
40 to 40.9	1.83	....	....	....	....	....	....	....	.60	1.52	....
41 to 41.9	1.89	....	....	....	....	....	....	....	.60	1.58	....
42 to 42.9	1.95	....	....	....	....	....	....	....	.60	1.64	....

*October 22.
†Sunset Pacific Oil Co., October 26.

Kern River, Newhall-McKittrick, Mount Poso and Round Mountain 11 to 13.9 gravity 45 cents, 14 gravity and above 50 cents, effective October 2, 1929. On December 1, 1928, the Union Oil Co. posted Midway-Sunset, Elk Hills, Buena Vista, Lost Hills and Coalinga crude as follows: 11 to 13.9 gravity at 45 cents, 14 gravity and above 50 cents.

Column 1—Signal Hill, Seal Beach, Huntington Beach and Alamitos Heights crude, 14 to 32.9 gravity, inclusive; Richfield, Olinda-Brea and Fullerton, 14 to 30.9 gravity; Torrance and Inglewood, 14 to 28.9 gravity; Domingues and Athens-Rosecrans, 24 to 42.9 gravity.

Column 2—Whittier crude, 14 to 22.9 gravity; Coyote Hills, 14 to 30.9 gravity.

Column 3—Kern River, Newhall and McKittrick, 11 to 19.9 gravity; Midway-Sunset, Buena Vista and Elk Hills, 11 to 33.9 gravity; Lost Hills, 11 to 34.9 gravity; oil below 14 gravity posted at 45 cents.

Column 6—Oil below 14 gravity posted at 45 cents.

Columns 8 and 9—Posted by Union Oil Co. only.

Kettleman Hills, 55 gravity and above, $1.65 (posted by Standard Oil Co. of California).

TANK WAGON MARKETS

Tank wagon quotations for gasoline and kerosene in United States as furnished by the larger marketing concerns Nov. 12

ALL TANK WAGON AND SERVICE STATION QUOTATIONS INCLUDE TAXES

STANDARD OIL CO (INDIANA)

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax of	Kero. tank wagon
Chicago†	17.0	18.0	3.0	13.0
Decatur, Ill.	19.2	20.2	3.0	13.1
E. St. Louis	18.4	18.4	3.0	12.2
Joliet	19.4	20.4	3.0	13.3
Peoria	19.2	20.2	3.0	13.1
Quincy	19.2	20.2	3.0	12.9
Davenport, Ia.	19.5	20.5	3.0	13.2
Des Moines	19.5	20.5	3.0	13.2
Keokuk	19.5	20.5	3.0	13.3
Sioux City	19.1	20.1	3.0	13.9
Duluth, Minn.	20.5	21.5	3.0	13.9
Mankato	20.1	21.1	3.0	13.7
Minneapolis	20.2	21.2	3.0	13.9
LaCrosse, Wis.	19.2	20.2	2.0	14.0
Milwaukee	18.1	19.1	2.0	12.9
Madison	18.3	17.3	2.0	13.1
Detroit, Mich.	19.8	20.8	3.0	14.7
Grand Rapids	19.7	20.7	3.0	14.6
Saginaw	19.9	20.9	3.0	14.8
Evansville, Ind.	20.0	21.0	4.0	14.0
Fort Wayne	20.4	21.4	4.0	14.4
Indianapolis	20.2	21.2	4.0	14.2
South Bend	20.4	21.4	4.0	14.4
Fargo, N. D.	21.9	22.9	3.0	15.9
Huron, S. D.	21.3	22.3	4.0	14.7
Sioux Falls	20.1	21.1	4.0	14.4
K. C., Mo.*	18.9	19.9	3.0	11.6
Springfield*	18.8	19.8	3.0	12.5
St. Louis*	17.9	18.9	2.5	12.3
St. Joseph	18.5	19.5	2.0	12.2
Wichita, Kans.	17.8	18.8	3.0	11.8
Bartlesville, Ok.	18.5	19.5	4.0	11.5

*State tax 2 cents; remainder city tax.

†Effective February 20, discounts on Q.D.A. in Chicago district 2 cents off service station price on purchases of 500 gallons or more per month and 4 cents on purchases of 1,000 gallons or more per month.

NAPHTHA

	Tank wagon	Tank car
Oleum spirits	15.7	12.9
V. M. & P. Naphtha	17.2	13.9
Cleaner's naphtha	17.0	14.9
Stanisol	17.0	15.4

Tank wagon prices f.o.b. Chicago; tank car prices f.o.b. Whiting.

STANOLIND FURNACE OIL IN CHICAGO

Less than 100 gallons	9.0
100 to 349 gallons	8.0
350 gallons or more	7.5

Note—Outside Chicago furnace oil discount of 1 cent per gallon is given on deliveries of 100 to 349 gallons and 1½ cents on deliveries of 350 gallons or more.

The following quantity discounts from the service station price are allowed on monthly sales of gasoline; 2,000 gallons or less, 2 cents; more than 2,000 and less than 6,000 gallons, 2½ cents; more than 6,000 gallons, 3 cents. Discounts are allowed each month and they are not cumulative. Delivery tickets showing date and quantity delivered must be sent to the seller before the tenth of the month to secure the discount on the previous month's purchases.

SOUTHWESTERN DISTRICT

Magnolia Petroleum Co.

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax of	Kero. tank wagon
Dallas, Tex.	17.0	21.0	4.0	13.0
Fort Worth	17.0	20.0	4.0	12.0
Houston	15.0	17.0	4.0	11.0
San Antonio	15.0	19.0	4.0	11.0
El Paso	15.0	18.0	4.0	16.0
Texarkana	17.0	19.0	4.0	12.0
Muskogee, Ok.*	16.0	19.0	4.0	13.0
Okla. City*	17.0	20.0	4.0	10.0
Tulsa*	15.0	19.0	4.0	10.0
Ft. Smith, Ark.	15.0	17.0	5.0	12.0
Little Rock	19.0	21.0	5.0	13.0

*Gasoline tank wagon price to dealers 2 cents under posted tank wagon.

ROCKY MOUNTAIN DISTRICT

Continental Oil Co.

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax of	Kero. tank wagon
Denver, Colo.	18.0	21.0	4.0	15.5
Pueblo	18.0	21.0	4.0	15.5
Grand Junction	22.5	25.5	4.0	19.0
Casper, Wyo.	20 0	23 0	4 0	14 0
Cheyenne	21.0	24 0	4 0	15 5
Butte, Mont.	25.5	28.5	5.0	20.0
Helena	25.5	28.5	5.0	20.0
Salt Lake, Utah	21.0	24.0	3.5	17.0
Albu'que, N. M.	21.0	24.0	5.0	17.0
Boise, Idaho	23.5	26 5	4.0	19 0
Twin Falls	23.5	27.5	4.0	19.0

PENNSYLVANIA—DELAWARE AND PART NEW ENGLAND

The Atlantic Refining Co.

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax of	Kero. tank wagon
Pittsburgh, Pa.	16.0	*22.0	...	13.0
Philadelphia	16.0	*22.0	...	13.0
Scranton	16.0	*22.0	...	13.0
Allentown	16.0	*22.0	...	13.0
Altoona	16.0	*22.0	...	13.0
Erie	13.0	*17.0	...	13.0
Dover, Del.	18.0	21.0	3.0	13.0
Wilmington	19.0	21.0	3.0	13.0
Springf'd, Mass.	18.0	20.0	2.0	15.0
Worcester	18.0	20.0	2.0	15.0
Boston	18.0	20.0	2.0	15.0
Providence, R.I.	18.0	20.0	2.0	13.0
Hartford, Conn.	18.0	20.0	2.0	14.0
New Haven	18.0	20.0	2.0	15.0

*Includes tax of 4.0 cents. Pennsylvania tax is collected by the dealer and paid by him direct to the State. The Atlantic Refining Co. recognizes a 2-cent per gallon discount on gasoline from its posted tank wagon markets on sales to dealers for purposes of resale. The Atlantic Refining Co. also recognizes a maximum discount of 2 cents per gallon on gasoline to commercial accounts under contract for one year.

NEW YORK AND PART OF NEW ENGLAND DISTRICT

Standard Oil Co. (New York)

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax of	Kero. tank wagon
Albany, N. Y.	18.0	20.0	2.0	15.0
New York*	16.0	18.0	2.0	15.0
Buffalo	18.0	20.0	2.0	14.0
Rochester	18.0	20.0	2.0	14.0
Syracuse	18.0	20.0	2.0	15.0
Boston, Mass.	18.0	20.0	2.0	15.0
Augusta, Me.	20.0	22.0	4.0	15.0
Manch't'r, N. H.	20.0	22.0	4.0	15.0
Burlington, Vt.	19.0	20.0	4.0	15.0

*Prices in steel barrels.

SOUTHERN DISTRICT

Standard Oil Co. (Kentucky)

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax of	Kero. tank wagon
Atlanta, Ga.	20.0	22.0	4.0	15.5
Augusta	20.0	22.0	4.0	15.5
Macon	23.0	25.0	4.0	15.5
Savannah	22.0	24.0	4.0	15.5
Birm'ham, Ala.	19.0	21.0	4.0	13.0
Mobile	20.0	22.0	4.0	15.0
Montgomery	21.0	23.0	4.0	16.5
Clarks'le, Miss.	18.0	20.0	5.0	12.5
Jackson	21.0	23.0	5.0	13.0
Natchez	20.5	20.5	5.0	14.0
Gulfport	22.5	24.5	5.0	14.0
Vicksburg	20.5	22.5	5.0	14.0
Jack'ville, Fla.	22.0	24.0	6.0	14.5
Miami	23.0	25.0	6.0	15.5
Pensacola	18.0	20.0	6.0	14.5
Tampa	22.0	24.0	5.0	14.5
Lexington, Ky.	20.0	22.0	5.0	15.5
Covington	20.0	21.0	5.0	15.5
Louisville	21.0	23.0	5.0	15.0
Ashland	18.0	19.0	5.0	15.5
Catlettsburg	18.0	19.0	5.0	15.5

In addition to the state tax of 4 cents on gasoline, Montgomery has city tax of 1 cent on gasoline and one-half cent on kerosene. Kerosene prices in Georgia include 1-cent tax. In Florida, an inspection fee of 0.125 cent; in Alabama, an inspection fee of one-half cent on kerosene and one-fourth cent on gasoline. Pensacola and Mobile taxes include 1-cent city levy. Gulfport tax includes privilege tax of 2 cents in addition to state tax.

Effective April 2, price to dealers 2 cents under posted tank wagon price.

PACIFIC COAST TERRITORY

Standard Oil Co. (California)

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax of	Kero. tank wagon
San Francisco	20.0	24.0	3.0	15.5
Los Angeles	19.5	23.5	3.0	15.5
Reno, Nev.	24.0	26.0	4.0	19.0
Portland, Ore.	20.5	24.5	3.0	16.5
Seattle, Wash.	20.5	23.5	3.0	16.5
Tacoma	20.5	23.5	3.0	16.5
Spokane	24.5	27.5	3.0	20.5
Phoenix, Ariz.	18.0	22.0	4.0	20.5

NEBRASKA

Standard Oil Co. (Nebraska)

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax of	Kero. tank wagon
Omaha	21.25	23.25	4.0	13.25
McCook	21.75	23.75	4.0	14.75
Norfolk	20.75	22.75	4.0	13.75
N. Platte	21.75	23.75	4.0	14.50
Scottsbluff	21.75	23.75	4.0	14.25

ATLANTIC COAST DISTRICT

Standard Oil Co. (New Jersey)

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax of	Kero. tank wagon
Atlantic City	16.0	18.0	2.0	13.0
Newark, N. J.	17.0	19.0	2.0	13.0
Annapolis, Md.	20.0	22.0	4.0	13.0
Baltimore	19.0	21.0	4.0	12 0
Cumberland	20.0	22.0	4.0	13.0
Washington	17.0	19.0	2.0	12.0
Danville, Va.	21.0	23.0	5.0	12.0
Norfolk	20.0	22.0	5.0	13.0
Petersburg	21.0	23.0	5.0	13.0
Roanoke	20.0	21.0	5.0	13.0
Richmond	20.0	22.0	5.0	13.0
Charles'n, W.Va.	19.0	21.0	4.0	13.0
Keyser	20.0	22.0	4.0	13.0
Parkersburg	19.0	21.0	4.0	12.0
Wheeling	20.0	22.0	4.0	13.0
Charlotte, N. C.	21.0	23.0	5.0	13.0
Hickory	21.0	23.0	5.0	13.0
Mt. Airy	21.0	23.0	5.0	13.0
Salisbury	19.0	21.0	5.0	13.0
Charleston, S.C.	21.0	23.0	6.0	13.0
Columbia	22.0	24.0	6.0	13.0

A 2-cent per gallon discount off the gasoline tank wagon price is offered to dealers.

OHIO

Standard Oil Co. (Ohio)

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax of	Kero. tank wagon
Ohio points*	19.0	20.0	4.0	†13.0

*Dealers and commercial accounts 2 cents under tank wagon.

†Service station price 15 cents.

CENTRAL SOUTH DISTRICT

Standard Oil Co. (Louisiana)

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax of	Kero. tank wagon
N. Orleans, La.*	15.0	15.0	5.0	13.0
Baton Rouge	20.0	20.0	4.0	14.5
Alexandria	19.0	21.0	5.0	16.0
Lafayette†	20.0	22.0	5.0	14.0
Lake Charles†	20.5	22.5	5.0	16.0
Shreveport	19.5	21.5	4.0	15.0
Knoxv'le, Tenn.	20.0	22.0	5.0	16.0
Memphis	20.0	22.0	5.0	12.5
Chattanooga	20.0	20.0	5.0	14.0
Nashville	19.0	19.0	5.0	16.0
Bristol	21.0	22.0	5.0	14.0
Lt. Rock, Ark.	19.0	21.0	5.0	13.0

*Tax of 5 cents includes city tax of 1 cent. Louisiana Kerosene prices include 1-cent state tax and 1-cent parish tax.

†Includes 1-cent parish tax.

TANK WAGON CHANGES

October 24—Standard Oil Co. of Indiana advanced the gasoline station price 1 cent in East St. Louis, Ill., to 18.4 cents.

November 5—Standard Oil Co. of Indiana reduced the tank wagon price on Stanisol naphtha 1 cent to 17 cents.

November 11—Standard Oil Co. of Indiana reduced the gasoline tank wagon and station prices 2 cents in the metropolitan area in Chicago, Ill., to 17 cents and 18 cents.

October 30—Standard Oil Co. of Kentucky reduced the gasoline tank wagon and station prices in Pensacola, Fla., to 18 cents and 20 cents.

Standard Oil Co. of Louisiana advanced the gasoline tank wagon and station prices in Knoxville, Tenn., to 20 cents and 22 cents.

CRUDE PRICE CHANGES

November 4—Standard Oil Co. of California renewed the higher price schedule on Seal Beach crude, re-establishing 14 to 17.9 gravity oil at 70 cents and a top price of $1.35 for 32 to 32.9 gravity oil.

November 11—Standard Oil Co. of California re-established the higher price schedules for Santa Fe Springs and Long Beach crudes.

November 12—Joseph Seep Purchasing Agency reduced Somerset oil in Cumberland Pipe Line Co.'s lines to $1.55 and in Eureka Pipe Line Co.'s lines to $1.29.

GULF COAST MARKETS UNCHANGED LAST WEEK

HOUSTON, Tex., Nov. 12.—Gulf Coast refinery markets were unchanged the past week with fuel oil and gas oils as well as pale and red oils steady in price. Fuel and gas oil apparently are in good shape despite the fact very little material is moving and the recent lowering of prices on pale and red oils has placed those products on a market level in which there is a feeling of confidence that there will be very little further weakening. This week opened with very little new business coming in, but Monday was a holiday and up to Tuesday evening orders had not had sufficient time to come in.

ALBERTA OIL ASSOCIATION

CHATHAM, Ontario, Nov. 9.—Directors of the Oil and Gas Association of Alberta at a meeting held recently decided to investigate the tariff on drilling machinery with a view to making representations to the Dominion government in favor of the removal or reduction of the tariff on items of equipment not now manufactured in Canada. S. J. Davies and P. D. Mellon were appointed a committee to study the problem. The Dominion government will also be asked to censor oil maps, while the provincial government will be requested to enforce the Registered Professional Engineers' Act with special reference to geologists. H. Sawley has succeeded Sam G. Baggs as secretary-treasurer of the association.

CRUDE OIL PRICES

(Continued from Page 141)

39-39.9 gravity	1.29
40 and above	1.31
Thrall‡	...
Callihan (May 15)	1.75
Lytton Springs (Lockhart)	See gravity table
Somerset	See gravity table

*Posted by Magnolia Petroleum Co.
†Magnolia Petroleum Co., Humble Oil & Refining Co., Crown Central Pipe Line Co.
‡Thrall prices same as North Central Texas less 19½ cents per cwt. freight.
§Humble Oil & Refining Co.

EASTERN STATES

Joseph Seep Purchasing Agency
(Effective October 1, 1929)

Penna Grade Oil in New York Transit Lines (New York)	$3.05
Bradford District Oil in National Transit Lines (Pennsylvania)	3.05
Penna Grade Oil in National Transit Lines (Pennsylvania)	3.05
Penna Crude Oil in Southwest Pennsylvania Lines (West Virginia)	3.00
Penna Grade Oil in Eureka Pipe Line Lines (Pennsylvania)	2.90
Penna Grade Oil in Buckeye Pipe Line Lines (Ohio)	2.70
Cabell Grade Oil in Eureka Pipe Line Lines (West Virginia) (May 22, 1929)	1.75
Corning 35-cent Grade Oil in Buckeye Pipe Line Co.'s Line (May 22, 1929)	1.80
Corning 25-cent Grade Oil in Buckeye Pipe Line Co.'s lines (May 22, 1929)	1.90
Somerset Oil in Cumberland Pipe Line Lines (Kentucky) (Nov. 12, 1929)	1.55
Ragland Grade Oil in Cumberland Pipe Line Lines (Kentucky) (Jan. 29)	.60

MIDDLE WESTERN STATES

Ohio Oil Co.
(Effective May 21, 1929)

Lima	$1.80
Wooster	1.90
Illinois	1.75
Indiana	1.57
Princeton	1.75
Plymouth	1.28
Waterloo (November 17, 1926)	1.35
Western Kentucky	1.68
Dundee, Mich. (Sept. 17, 1929)§	..... Same as Mid-Continent gravity scale
Upper and Lower Traverse sands, Mich‖	..... Same as Mid-Continent gravity scale
Midland, Mich. (June 3, 1929)*	$1.70
Saginaw, Mich., Saginaw Sand (February 10)†	1.89
Saginaw, Mich., Berea Sand (February 10)†	1.79
Cumberland, Clay, Barren, Clinton and Monroe Counties, Kentucky (March 15)‡	1.50
Oil in line in Stoll Oil Refining Co. in Oil City, Ky. (Oct. 7, 1929)§	1.70
Oil Springs (Canada)¶	2.27
Petrolia (Canada)¶	2.20

*Posted by Pure Oil Co.
†Posted by Sun Oil Co.
‡Posted by Paragon Development Co.
§Posted by Stoll Oil Refining Co.
¶Posted by Imperial Oil Co., Ltd.
‖Posted by Standard of Indiana for boat shipment.

MEXICAN CRUDE

Panuco*	$ .64

*Based on October transactions for deliveries during October and December. Price exclusive of taxes.

NATIONAL ADVERTISING

helps build your **REPUTATION**

and **PRESTIGE** *in your locality...*

"He's a jolly good fellow!"...

the dealer who carries nationally advertised products is a good fellow in his community—respected and trusted. When his neighbors read the advertising for his products, they think of him—and think *well* of him.

The dealer automatically shares in the reputation the producer creates through advertising. He shares, too, the good will behind the advertiser's trade mark and product.

If you sell nationally advertised motor oil and gasoline—every advertisement for that motor oil and gasoline helps build your reputation and prestige in your community.

SINCLAIR REFINING COMPANY, INC., 45 Nassau Street, New York

Atlanta · Boston · Chicago · Houston · Kansas City

SINCLAIR

OPALINE

REG. U.S. PAT. OFF.

is **NATIONALLY ADVERTISED AS THE** *Extra Service* **MOTOR OIL**

Oils Held Down By Market Weakness

Fail to Reap Benefit for the Time Being Which Big Drop in Crude Production Would Confer Under Normal Financial Conditions

Weakness which continued to characterize the general market in securities the last week prevented the oils from reaping the benefits which favorable developments in the industry itself would have conferred under normal financial conditions. The decline of 201,733 bbls. in crude production of the United States, making a total decrease of more than 300,000 bbls. in the last three weeks, would send oil shares soaring, it is believed, if it were not for the stock exchange crash that has wiped out millions of dollars of security values.

The oils, however, continue to give a good account of themselves under discouraging conditions of the moment, and market observers express the conviction that when the inevitable upturn comes the oil issues will be among the leaders in the rise of security prices to their proper levels.

Columbia Gas

Columbia Gas & Electric Corp. and subsidiaries report for quarter ended September 30, 1929, net income of $3,688,642 after depreciation, depletion, taxes, lease rentals, subsidiary preferred dividends, etc., equivalent after allowing for dividend requirements on preferred stocks to 26 cents a share earned on 8,476,682 shares of no-par common stock. This compares with $2,890,704 or 17 cents a share in same quarter of 1928 computed on present share basis.

Net income for 12 months ended September 30, 1929, amounted to $30,870,045, equivalent after preferred dividends to $2.97 a share on common stock, as compared with $26,903,069 or $2.50 a share in preceding 12 months figured on the same share basis.

Common stockholders having approved the increase of the authorized common stock to 30,000,000 shares from 10,000,000 shares from 10,000,00 shares, directors have voted that the 25 per cent common stock dividend, declared a short time ago, shall be payable March 31, 1930, to stockholders of record February 28, 1930.

Simms Petroleum

Simms Petroleum Co. and subsidiaries report for quarter ended September 30, 1929, net profit of $888,887 after interest, taxes, drilling costs, depreciation, depletion, etc., equivalent to $1.06 a share (par $10) on 841,148 shares of stock. This compares with $475,098 or 57 cents a share on 838,962 shares in preceding quarter and $269,093 or 39 cents a share on 690,118 shares in September quarter of 1928.

Net profit for first nine months of 1929 totaled $1,306,634 after above charges, equal to $1.55 a share on 841,148 shares, against $59,250 or nine cents a share on 690,118 shares in first nine months of previous year.

Beacon Oil

Beacon Oil Co. reports for quarter ended September 30, 1929, profit of $338,877 after interest and depreciation, but before federal taxes, comparing with $390,031 in preceding quarter and $945,407 in third quarter of 1928. Stock amounts to 1,432,267 no-par shares. The preferred was retired earlier in the year.

For the first nine months of 1929, profit totaled $869,385 before federal taxes, against $1,086,874 in first nine months of previous year.

Imperial Oil

Imperial Oil, Ltd., declared the regular quarterly dividend of 12½ cents, in Canadian funds payable December 2 to stock of record November 15.

Panhandle P. & R.

Panhandle Producing & Refining Co. and subsidiaries report for quarter ended September 30, 1929, net profit of $30,417 after taxes, depreciation, depletion, amortization, intangible development costs, interest and minority interest, equivalent to $1.20 a share on 25,232 shares of 8 per cent cumulative preferred stock on which there is an accumulation of unpaid dividends. This compares with net profit of $66,537 or $2.60 a share on 25,532 shares of preferred in preceding quarter and net loss of $12,671 in third quarter of 1928.

Net profit for nine months ended September 30, 1929, amounted to $129,874 after above charges, equal to $5.15 a share on 25,232 shares of preferred stock, against net loss of $76,827 in first nine months of previous year.

Twenty Representative Stocks

The Oil and Gas Journal's weekly average price of 20 representative petroleum stocks listed on the New York Stock Exchange and New York Curb, based on closing quotations for Saturday, was as follows:

June 1	56.45	Aug. 24	60.61
June 8	58.37	Aug. 31	60.90
June 14	57.76	Sept. 7	59.16
June 21	56.76	Sept. 14	60.40
June 28	56.70	Sept. 21	57.93
July 5	56.62	Sept. 28	58.63
July 12	55.69	Oct. 5	57.00
July 19	56.83	Oct. 12	59.75
July 26	55.62	Oct. 19	58.70
Aug. 3	55.09	Oct. 26	54.59
Aug. 10	54.15	Oct. 31	42.29
Aug. 17	60.32	Nov. 8	48.31

Standard of Nebraska

Standard Oil Co. of Nebraska declared an extra dividend of 25 cents and regular quarterly dividend of 62½ cents, both

TRANSACTIONS IN OIL SHARES ON NEW YORK STOCK EXCHANGE

Quotations Compiled by Francis, Bro. & Co., Members of New York Stock Exchange, Kennedy Building, Tulsa, Okla.

1929 High	1929 Low	Week ended Nov. 9 Sales	Week ended Nov. 9 High	Week ended Nov. 9 Low	Week ended Nov. 9 Close	Stocks		Outstanding capital	Par value	Div. rate	Last paid	1926 High	1926 Low	1927 High	1927 Low	1928 High	1928 Low
42⅝	17½	12,500	25	21	22⅛	Amerada Corp.		922,075	N.P.	50cQ	7-31-29	32⅞	24¼	37⅝	27⅝	43⅞	27⅛
64¾	15	6,700	24⅞	15½	18⅛	American Republics Corp.	(sh)	209,180	N.P.	.....	3-20-29	74	39⅞	82⅛	35⅛	85	51⅛
47¼	40½	No sales.				Associated Oil		$57,260,300	$25	50cQ	9-30-29	60	44¾	50¼	35	53⅜	37½
77⅞	35	118,300	47	38¾	42⅜	Atlantic Refining		$50,000,000	$25	25cQ*	9-16-29	128⅜	97	131⅜	104	66⅜	50
49⅛	20	67,500	27½	22½	25½	Barnsdall Corp.		$45,235,650	$25	50cQ	8- 6-29	33½	23½	35½	20¾	53	20
47⅛	23	112,200	29⅝	22	24⅞	Continental Oil of Delaware	(sh)	4,741,554	N.P.	.....	3-31-27	..	..	..	..	..	..
94¾	47	8,600	54½	48⅜	49	General Asphalt		$20,785,400	$100	.....	.....	94½	50	96¾	65	94⅞	68
109	23	15,100	54½	35⅝	43	Houston Oil		$25,000,000	$100	.....	.....	72	50¼	175¾	60⅛	167	79
39⅜	17¾	35,900	25⅞	22½	24½	Independent Oil & Gas	(sh)	1,333,572	N.P.	50cQ	7-31-29	34	19⅝	32¾	17⅝	38⅜	21¾
53	13⅛	66,200	25¾	15½	22	Indian Refining		$12,307,370	$10	.....	5-31-24	12¾	7½	12⅛	7⅝	39⅝	9
38⅜	24	9,000	25	17⅛	20	Lago Oil & Transport	(sh)	3,992,122	N.P.	.....	5- 1-27	25⅞	16½	37¾	20½	39⅛	27⅜
18	7	22,000	10	8⅝	8¾	Louisiana Oil Refining	(sh)	1,190,063	N.P.	.....	.....	19⅞	12	18⅛	10	19¾	9⅜
18½	11¼	1,700	10	10	10	Maracaibo Oil	(sh)	330,000	N.P.	.....	.....	28	16½	22¾	12	25½	12½
69⅜	9¼	50,600	18¼	13⅝	16	Mexican Seaboard	(sh)	1,276,873	N.P.	.....	12-15-20	13¾	6	9¼	3	73	4⅝
39⅞	23½	41,000	30⅛	25⅛	27¼	Mid-Continent Petroleum	(sh)	1,857,912	N.P.	50cQ	8-15-29	37	20½	39⅜	25½	44½	25⅛
5⅛	1½	6,600	1¾	1⅝	1⅝	Middle States Oil		$24,298,850	$10	.....	7- 1-23	2½	½	3¾	1⅝	7⅜	2⅜
69	40½	16,100	62½	57	61	Pan American P. & T.		$50,084,700	$50	.....	10-20-27	76½	56⅛	65⅞	40⅛	54⅞	38¼
69¼	10½	90,200	62¾	57⅜	61	Pan American P. & T. "B"		$121,105,050	$50	.....	11-15-24	78⅜	56⅞	66⅜	40¼	58⅞	37¾
18½	13⅝	No sales.				Pan American Western "B"	(sh)	400,000	N.P.	.....	1-30-27	46	30	37⅞	16¾	28⅜	15½
15¼	5	5,100	7	3	5	Panhandle P. & R.	(sh)	199,370	N.P.	.....	.....	32	4½	18⅞	8	21¾	11½
76	47½	300	53	52½	52½	Panhandle P. & R. pfd.		$2,564,400	$100	37½cQ	7- 2-23	99¾	51	83	54	108	70
47	27	46,100	34⅞	28¼	30⅝	Phillips Petroleum	(sh)	2,406,796	N.P.	37½cQ	10- 2-29	57⅜	40	60¼	36¼	53⅞	35¼
3⅜	1	6,900	1½	1	1¼	Pierce Oil Corp.		$29,622,831	$25	.....	.....	..	..	1⅛	½	5¼	½
5⅞	½	8,900	3¼	2½	2¾	Pierce Petroleum	(sh)	2,500,000	N.P.	.....	.....	7	2¼	5½	2½	7	3½
65⅝	40½	18,600	50⅞	46⅛	48	Prairie Oil & Gas		$61,720,125	$25	50cQ*	9-30-29	60¼	48	55½	45⅝	68	46
65	45	22,100	58⅜	55	56	Prairie Pipe Line		$101,250,000	$25	75cQ†	9-30-29	137½	122½	190	130¾	280	172
25⅞	4	7,000	8⅛	6⅜	7¼	Producers & Refiners		$37,438,950	$50	.....	9-15-23	20¾	11	33⅞	16¾	29⅞	16
46⅜	30	28,000	33	30	30	Producers & Refiners pfd.		$2,845,350	$50	37½Q	5- 1-25	41¾	30¾	50	36⅞	49⅝	41
30¾	20⅛	2,400	25⅜	21⅞	23½	Pure Oil		$75,959,250	$25	37½Q	9- 2-29	31	25¼	33½	25	31⅝	19
49⅝	20	31,600	31	27½	30	Richfield Oil		$47,964,650	$25	50cQ	8-15-29	27½	22	28⅝	25⅜	56	23
64	43¼	59,500	54⅛	49¾	53½	Royal Dutch, N. Y.	(sh)	611,303	$13.40	.....	8-13-29	57⅜	47⅜	54½	44¼	64	44⅝
55¾	43⅜	No sales.				Shell Transport & Trad.		£19,654,274	£1	$1.45	7-23-29	48⅝	40½	47⅞	41⅜	57½	40⅝
31¾	19	37,000	25	22	23⅝	Shell Union Oil	(sh)	13,000,000	N.P.	35cQ	9-30-29	31	24	31¾	24⅝	39¼	23¼
40⅞	18⅛	13,300	24	20	22⅝	Simms Petroleum		$8,060,380	$10	40cQ	9-14-29	25⅝	15⅛	25⅜	14¼	27¼	18⅛
45	22¼	161,300	30	25	27⅛	Sinclair Consolidated	(sh)	5,500,000	N.P.	50cQ*	10-15-29	24⅞	15¾	22⅜	15	46¾	17⅜
111	103	900	107	105½	106	Sinclair Consolidated pfd.		$16,025,250	$100	$2Q	8-15-29	99½	90	104½	97	110	102½
46½	28	25,600	34⅛	30	31½	Skelly Oil		$27,237,750	$25	50cQ	9-16-29	37⅛	26⅝	37⅜	24⅛	42⅝	25
81⅞	51½	58,300	69	62⅛	65⅞	Standard Oil of Cal.	(sh)	12,594,098	N.P.	62½cQ	9-16-29	63⅝	51½	60¾	50⅜	80	53
83	48	362,600	69⅜	57¼	62	Standard Oil of N. J.		$620,079,800	$25	25cQ*	9-16-29	46⅜	37½	41⅜	35⅛	59⅜	37¾
48⅛	32	92,600	39¼	33⅝	35⅛	Standard Oil of N. Y.		$434,094,575	$25	40cQ	9-16-29	47¼	30⅜	34⅛	29¾	44¼	28¾
84¾	57	3,800	70	64⅞	65	Sun Oil	(sh)	1,297,627	N.P.	25cQ	9-16-29	41¾	30⅛	34⅞	30	77	31½
24	7⅝	30,300	11⅛	7½	8⅜	Superior Oil Corp.	(sh)	2,324,938	N.P.	.....	12-20-20	..	..	..	..	..	..
71⅞	50½	82,400	58⅜	52¼	53⅞	The Texas Corporation		$211,076,650	$25	75cQ	10- 1-29	58	48	58	45	74¾	50
23⅞	9¾	18,700	12⅝	10⅛	11½	Texas Pacific Coal & Oil Co.		$8,380,340	$10	5A‡	1- 3-28	19½	12	18⅞	12	26⅝	12⅛
40	27⅛	No sales.				Tide Water Oil	(sh)	2,191,759	N.P.	20cQ	9-30-29	39¼	27	29⅛	19	41½	19⅝
97½	88⅜	900	90	87	89	Tide Water Oil 5% pfd		$20,705,200	$100	$1.25Q	8-15-29	103	87¼	90⅛	85	100⅛	86
23½	12	34,500	14½	12½	13	Tide Water Associated	(sh)	4,796,158	N.P.	.....	8- 1-27	27	20⅞	19⅛	15¾	25	14¾
15¼	5¼	181,400	8¾	7	7⅝	Transcontinental Oil	(sh)	3,742,029	N.P.	.....	.....	5½	3	10⅜	3¾	14¾	7¼
57	43⅛	19,300	49⅛	44½	47½	Union Oil of California		$94,798,100	$25	50cQ	8-10-29	58⅜	37¼	56½	39⅝	58	42⅜
163¾	121⅞	1,500	147¼	135	140	Union Tank Car		$31,061,200	$100	$1.25Q	9- 3-29	120⅜	84¼	127½	94	128⅛	110
42⅞	15	14,700	24⅜	19⅞	21½	Warner-Quinlan	(sh)	356,000	N.P.	50cQ	10- 1-29	30⅛	23½	34½	24½	44⅞	26
38	25	4,200	31½	27⅛	28½	White Eagle Oil & Refining	(sh)	490,000	N.P.	50cQ	10-21-29	29¾	25⅛	27½	20	38	20⅛
29¾	13½	4,900	16	14	15	Wilcox Oil & Gas	(sh)	2,400,000	N.P.	.....	5-10-28	..	..	..	..	..	..

*Plus extra dividend of 25 cents. †Plus extra dividend of 50 cents. ‡Payable in stock.

payable December 20 to stock of record November 29.

Texas Pacific Crude Oil

Texas Pacific Coal & Oil Co. declared regular quarterly dividend of 2½ per cent in stock, payable December 31 to stock of record December 5.

Illinois Pipe Line

Illinois Pipe Line Co. declared the regular semi-annual dividend of $10, payable December 16 to stock of record November 18.

Plymouth Oil

Plymouth Oil declared a dividend of 50 cents, payable November 30 to stock of record November 15.

Swan-Finch Oil

Swan-Finch Oil Corp. declared the regular quarterly dividend of 43¾ cents on the 7 per cent ($25 par) preferred, payable December 1 to stock of record November 9.

The Texas Corporation

Stockholders of The Texas Corporation have approved increase in authorized capital stock to $350,000,000, or 14,000,000 shares of $25 par, from $250,000,000. Part of the additional $100,000,000 is to provide for conversion of the recent issue of $100,000,000 of 5 per cent convertible debentures. As of August 31, this year, there was $246,202,900 capital stock outstanding.

Standard of New Jersey

Standard Oil Co. of New Jersey, the Delaware corporation and the principal operating subsidiary of Standard Oil Co. of New Jersey, the holding company will increase its capital from $200,000,000 to $250,000,000, according to notice filed with the Secretary of State of Delaware. No public financing will result from the increase Walter C. Teagle, president, said. The increase is an internal matter due to the fact that the original capital was not sufficient to carry on the company's business, he added. The additional capital stock will be acquired by the parent Standard Oil Co. in exchange for working capital.

Standard of California

The Standard Oil Co. of California has declared a stock dividend of 2 per cent in addition to regular dividend No. 15 of 62½ cents a share, payable December 16, 1929, to stockholders of record November 16, 1929. The company will not issue fractional shares, but will pay cash at the market price to those entitled to a fraction of one share.

Many employes of the Standard Oil Co. of California are investors in the stock of the corporation and to those employes who have made loans, which under the present depressed condition of the securities market, may threaten their investment, the company has offered assistance, according to an announcement. There are thousands of employes who are stockholders, most of them having acquired their holdings through the operation of the company's stock investment and savings plan.

Ohio Oil

Ohio Oil Co. has declared an extra div-

(Continued on Page 148)

INDEPENDENT OILS ON NEW YORK CURB

Quotations Compiled by Francis, Bro. & Co., Members of New York Curb Market, Kennedy Building, Tulsa, Okla.

1929 High	1929 Low	Week ended Nov. 8 Sales	High	Low	Close	Stocks—	Outstanding capital	Par value	Div. rate	Last paid	1926 High	1926 Low	1927 High	1927 Low	1928 High	1928 Low
72	¼	12,800	¼	⅛	¼	Amer. Con. Oilfields	$11,018,000	$5	.....	.....	$6.75	.45	2⅞	.55	1½	.53
8⅝	1⅛	3,500	2⅞	2	2	Amer. Maracaibo	(sh) 700,000	N.P.	.....	.....	..	..	7½	2¾	9½	3⅛
5	1⅛	500	1⅝	1⅜	1⅜	Argo Oil	(sh) 683,971	$10	.....	.....	..	..	2¾	1	4½	2¼
62	7⅞	No sales.				British-American	(sh) 1,311,321	N.P.	25cQ	10- 1-29	85¼	60	40	20½	55	32¾
4⅞	1⅝	7,800	1⅞	1	1½	Carib. Syndicate	$131,250	25c	.....	.....	28⅜	9¼	28¼	15½	4½	3⅞
68½	20	483,600	41⅞	25⅛	30	Cities Service	(sh) 24,290,359	N.P.	30cQ*	11- 1-29	..	..	58¾	40¼	90⅞	54
98¾	93½	1,800	89⅞	84	84	Cities Service pfd.	(sh) 1,500,000	N.P.	50cM	11- 1-29	..	..	95⅜	87	103½	94½
2	½	2,100	..	..	..	Colombia Syndicate	$2,000,000	$1	.....	.....	3½	1¾	3⅞	1⅛	3¼	.76
11⅛	2½	400	4½	4	4	Cons. Royalty	$5,000,000	$10	15cQ	.....	..	..	9¾	6⅜	8⅞	6¼
11¾	5⅝	1,060,400	7¾	6¾	7	Creole Syndicate	(sh) 5,977,873	N.P.	.....	.....	16	10	14⅞	9½	17½	9½
2½	¾	300	1	¾	1	Crown Central	(sh) 578,000	N.P.	.....	.....	..	..	3	.50	3¼	.76
26	7¾	3,200	10⅝	6½	9	Darby Petroleum	(sh) 1,019,392	N.P.	25cQ	10-15-29	7⅞	6¾	12	4	33½	3¼
11	2	1,200	5⅜	5	5	Derby Oil & Refining	(sh) 500,000	N.P.	.....	.....	..	..	2½	74	2¼	1
44	20⅞	No sales.				Derby Oil & Refining pfd.	(sh) 48,500	N.P.	.....	.....	..	..	16¾	4	21⅛	7½
209	121⅛	11,700	145	126	131⅛	Gulf Oil Corp.	(sh) 4,504,921	$25	37½cQ	10- 1-29	98	92	118	86¼	165	101⅛
2⅞	⅞	4,300	1	¾	⅞	Intercontinental Pet.	$5,682,000	$5	.....	.....	$3.00	.83	2½	.80	3⅜	1
3⅝	1¼	400	2	2	2	Kirby Petroleum	(sh) 750,000	N.P.	.....	.....	..	..	2¼	1⅛	3	1¼
6⅛	2¼	1,100	2½	2½	2½	Leonard Oil & Dev.	$50,000,000	$25	.....	.....	12¼	5¾	10⅞	5⅛	9⅜	5⅛
38⅞	19	800	22½	21	21	Lion Oil & Refining	(sh) 250,000	N.P.	50cQ	10-27-29	27	20	27½	20	43⅞	20
50	28	2,100	43½	35⅛	35⅛	Lone Star Gas	(sh) 5,000,000	N.P.	20cQ	9-30-29	46	30	59⅜	37	69⅛	48½
1¼	¼	700	½	¼	¼	Magdalena Syndicate	(sh) 850,000	$1	.....	.....	2⅞	1	2⅞	.80	1⅞	.50
38½	17¾	200	15½	14	14	Margay Oil	(sh) 160,000	N.P.	50cQ	10-10-29	34	12½	52	12	48½	32
6⅜	3	10,700	3⅜	3	3	Mexico-Ohio Oil	.....	...	.....	.....	8	5½	12⅛	5	8	2¾
1½	⅝	1,400	⅞	⅝	⅝	Mountain & Gulf	$4,000.000	$1	2cQ	10-15-29	1¾	1⅛	1½	1	1¾	.76
22⅞	7	900	9	8⅛	8⅞	Mountain Producers	$1,682,182	$10	40cQ	10- 1-29	26	23	29¼	22¾	28⅞	19½
5	2⅛	500	2¾	2½	2½	New Bradford Oil	$1,095,291	$5	12½cQ	10-15-29	6⅝	5	5⅞	4⅝	5⅝	4¼
9⅜	2¼	400	3⅛	3	3	New Mex. & Arizona	$1,000,000	$1	.....	.....	..	..	16	9¼	11⅞	7⅛
18½	8¾	500	9¾	8¾	8¾	North Central Texas	(sh) 400,000	N.P.	15cQ	9- 3-29	..	..	12¾	9½	14¼	8½
3½	½	3,200	¾	½	¾	Pandem	(sh) 489,875	N.P.	.....	.....	10⅛	5⅞	9⅜	3¼	6	2⅛
10¼	3¼	3,800	4	3¼	3¼	Pantapec Oil	(sh) 1,506,600	N.P.	.....	.....	12¼	11¾	12⅛	7	15⅝	8½
7⅜	4⅜	No sales.				Pennok Oil	(sh) 150,000	N.P.	.....	.....	22¾	12	13½	5⅛	7¾	4⅞
16	9⅝	100	10	10	10	Red Bank Oil	(sh) 250,000	N.P.	.....	.....	17	8½	24⅜	7	18	4⅞
8½	1⅛	3,500	3	2¼	2⅞	Reiter-Foster	(sh) 388.584	N.P.	10cQ	9- 1-29	30¼	12	15½	3½	12⅞	4⅛
11	3	600	4⅛	3⅞	3⅞	Ryan Consolidated	(sh) 500,000	N.P.	.....	.....	7	4½	7	4½	12	4⅛
5⅞	1	800	2½	2⅛	2⅛	Salt Creek Consolidated	(sh) 1,286,300	$10	10cQ	10- 1-29	10	7⅛	8	5¼	7¼	5½
25⅞	9⅛	4,600	11	10	10½	Salt Creek Producers	(sh) 1,496,859	$10	50cQ	11- 1-29	35	24⅛	35½	27¼	35	23⅛
2½	1⅛	No sales.				Savoy Oil	$750,000	$5	.....	.....	6⅞	1¾	7	1¾	3½	1
145	82	No sales.				Transcontinental pfd.	(sh) 157,500	$100	.....	.....	92	63½	92	63½	93¼	75
6½	1¾	6,200	2¾	2¼	2⅜	Venezuelan Petroleum	(sh) 755.090	$5	5cQ	8-15-29	8	4½	7⅜	4¼	9⅛	4⅜
9¼	4	100	4	4	4	Woodley Petroleum	$500,000	$1	.....	.....	8⅛	5½	7	4⅜	8¼	4⅞
2⅞	⅛	100	1	1	1	"Y" Oil & Gas (new)	(sh) 100,000	N.P.	.....	.....	6½	6	6	1¾	8⅜	2⅛

*Including extra in stock.

STANDARD OIL STOCKS ON NEW YORK CURB

Quotations Compiled by Francis, Bro. & Co., Members of New York Curb Market, Kennedy Building, Tulsa, Okla.

1929 High	1929 Low	Week ended Nov. 9 Sales	High	Low	Close	Stocks—	Outstanding capital	Par value	Div. rate	Last paid	1926 High	1926 Low	1927 High	1927 Low	1928 High	1928 Low
18	13¼	8,400	15¼	13⅛	13⅞	Anglo-American Oil	£4,192,635	£1	.....	6- 5-29	21	16	21⅝	17⅞	22⅜	14⅞
2½	1	100	1	1	1	Atlantic Lobos	(sh) 500,000	N.P.	.....	.....	..	..	3¾	¾	5	1¼
46½	25½	No sales.				Borne Scrymser	$1,000,000	$25	$1S.A.	10-15-29	76	65	69	50	56½	44½
74¼	55	500	62	61	62	Buckeye Pipe Line	$10,000,000	$50	$1Q	9-14-29	59½	42	60	45	76	53
210	125	400	143	138	139¾	Chesebrough Mfg.	$3,000,000	$25	$1Q*	9-30-29	82½	65	126	76½	161	117
29	8	1,600	17¼	13⅜	14	Continental Oil	$36,057,840	$10	.....	12-15-27	25⅞	17½	22⅝	16¼	23	16
95	45	100	40½	40	40½	Cumberland Pipe Line	$1,500,000	$50	$1Q	9-15-29	137	102	137	89	114	67
70⅛	49¾	100	49½	48¼	48¼	Eureka Pipe Line	$5,000,000	$100	$1Q	11- 1-29	63¾	43	68½	47	88	64⅛
6⅝	5	No sales.				Galena Signal Oil	$16,000,000	$100	.....	.....	32½	9⅞	13½	3½	13	4¼
128	72½	17,100	97⅞	81⅛	89	Humble Oil & Refining	$74,103.300	$25	30cQ†	10- 1-29	68½	52	68½	54	114¾	59¼
340½	285	200	275	275	275	Illinois Pipe Line	$20,000,000	$100	$10S.A.	6-15-29	144½	125½	182	123¾	290½	176½
41	22	8,500	32⅞	25¼	29¾	Imperial Oil Co., Ltd.	(sh) 26,421,768	N.P.	12½cQ	9- 3-29	..	..	64¾	37¾	104	56¾
33¾	26⅛	3,600	32¾	29	29⅛	Indiana Pipe Line	$3,000,000	$10	50cQ‡	11-15-29	72½	58	94½	61	91⅞	74⅜
30⅜	15	5,100	22⅝	20⅜	21½	International Pet.	(sh) 14,247,088	N.P.	12½cQ	6-25-29	35½	28¾	29	28¼	55	35
25⅞	12	6,500	17⅜	15⅝	16	National Transit	$6.362,500	$12.50	25cQ	9-26-29	20¾	12½	24	13½	32⅜	19⅜
16	10	No sales.				New York Transit	$1,000,000	$10	40cQ	10-15-29	51½	27¼	44½	31¼	75	38½
63	45	100	44¾	44¾	44¾	Northern Pipe Line	$2,000,000	$50	$2S.A.	7- 1-29	80½	64	100	70	69	56½
79⅛	64⅛	8,000	73	70⅞	70⅞	Ohio Oil	$60,000,000	$25	50cQ‡	9-16-29	67¾	55¾	67⅞	52	84	58½
44½	21	900	20⅞	20¼	20⅞	Penn Mex. Fuel	$10,000,000	$25	50cQ	12-15-28	24¾	15	39	12	84	28
50	34⅝	100	34¾	34¾	34¾	Solar Refining	$4,000,000	$25	$1.25S.A.	6-20-29	..	..	..	..	..	..
22½	13	500	22⅜	21	21	Southern Pipe Line	$1,000.000	$10	50cQ	.....	74½	61½	27¼	15½	19	15
60¼	35⅛	2,200	44⅞	40	40	South Penn Oil (new)	$30,000,000	$25	50cQ	9-30-29	50	34½	41½	35	71⅞	36¾
70	60	No sales.				Southwest Pa. Pipe Lines	$1,750,000	$50	$1Q	10- 1-29	56	47½	83	55½	102	70
64	45	1,104.200	55⅜	50	52⅝	Standard Oil of Indiana	$348,175,069	$25	62½cQ	9-16-29	70½	60½	81½	64⅝	95⅞	70⅞
32½	18	7,600	25⅞	20	25¼	Standard Oil of Kansas	$8,000,000	$25	.....	6-16-24	36½	16½	20⅞	14⅝	37¾	15
46⅞	35⅛	30.400	39½	33⅛	36⅜	Standard Oil of Kentucky	$25,654,516	$10	40cQ	9-30-29	134⅜	108	130	111½	179¾	122¼
50¼	45	300	43¾	43¾	43¾	Standard Oil of Nebraska	$4,649,225	$25	62½cQ‡	9-30-29	51⅛	42	49½	40	54⅞	39⅞
129	60	14,000	117¾	85	88	Standard Oil of Ohio	$14,000,000	$25	62½cQ	10- 1-29	372	288	87½	72	134	71
18	10	150	10	10	10	Swan-Finch Co.	$861,468	$25	.....	1-15-29	21	15	21	14½	23½	16
133¼	75	15,900	109¼	95	99	Vacuum Oil Co.	$126,180,350	$25	$1Q	9-30-29	109⅜	90¼	..	..	111	72

*Plus 50 cents extra. †Plus 20 cents extra. ‡Plus 25 cents extra.

POTENTIAL MISSOURI-KANSAS OIL FIELDS

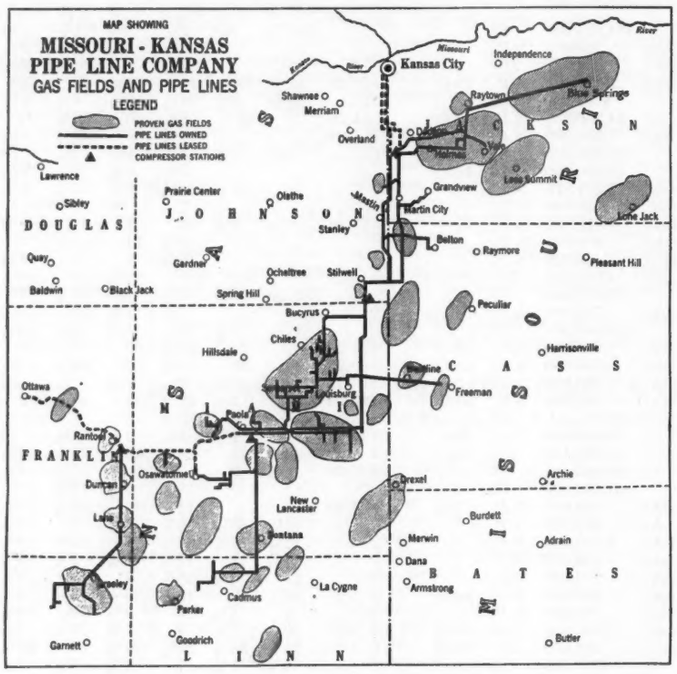
(Continued from Page 41)

Vilas shales.
Plattsburg lime (key bed).
Lane shale.

Kansas City formations:

Iola lime.
Chanute shale.
Drum lime.
Cherryvale shales.
Winterset lime.

The balance of the log for the Anderson County district is the same as that given above for the Jackson County, Missouri, area below the Winterset lime, which would indicate that erosion had removed these formations found in Anderson County from that district farther to the northwest or that some of them were never laid down in that vicinity.



In a few wells a little oil has been found in the Lees Summit Pool and one operator has a five-acre tract upon which he has two wells producing 5 and 10 bbls. per day each and they are both pumped regularly and the oil trucked and sold in Independence, Mo. It is understood that it is about 31.8 gravity oil and brings $1.25 per barrel delivered at Independence.

Several residents of Lees Summit and vicinity have drilled wells upon their home property, town lot drilling, and secured enough gas to supply all their requirements for heating and cooking.

One such well is reported as being drilled in Lees Summit that came in over a year ago with a casinghead pressure of about 50 pounds per square inch and is still producing at around 40 pounds pressure.

This well was finished and the casing cemented at the surface and fitted with bradenhead from which one pipe leads to a gas engine that is the prime mover for a small electric plant which supplies ample power for all lights and other electrical apparatus in a large garage and in the home and the other gas line is laid into the house and garage to furnish gas for heating and cooking.

It is stated that this entire installation cost about $4,000 and paid for itself in saving in electric current and gas bills in about 10 months.

Many ingenious outfits have been rigged up at these wells where there is a small oil showing. One well is equipped with a two and one-half horsepower Montgomery-Ward gas engine and a small pump jack, and produces about 1 bbl. of oil per day. The gas from this well is piped to the gas engine and in this way the well actually furnishes the means of lifting the oil to the surface besides giving surplus gas for domestic purposes.

It is stated that shortly after the close of the World War a deep test to approximately 3,000 feet was made in the vicinity of Buckner, Mo., but the well was off structure and nothing in the nature of pay formations was encountered.

To supply Kansas City area with suitable water the Missouri Valley water tunnel was constructed under the Missouri River to bring water from the city's new water purification plant to the pumping stations which distribute it to various parts of the city.

This tunnel is approximately 7½ feet in diameter, concrete lined through its entire distance of 15,500 feet and is at a depth of about 280 feet below the river channel and was dug through shale and sandstone formations occurring in lenses of irregular shape and size, but all apparently laid down over an anticlinal structure that has a north and south axis.

In sinking the shafts and driving the tunnel considerable trouble was encountered due to the presence of gas in such quantity that safety lamps had to be used at all times and every precaution taken to prevent explosions.

Fresh air was forced into the working at all times by blowers at shafts No. 2 and No. 3, each delivering about 4,500 cubic feet of free air per minute, but in spite of all these precautions several small explosions took place due to the gas encountered and two large explosions occurred during the construction of the tunnel.

This has become quite generally known and with the expansion of the system of gas gathering lines and drilling of new wells in the Jackson County area just south of the city by the Missouri-Kansas Pipe Line Co. and others' there is considerable talk of exploring for gas and oil within the city limits of Kansas City itself.

It also seems quite likely that one or more deep tests for oil will be started in the near future upon some of the structures where gas is known to exist in the territory south of Kansas City in both Missouri and Kansas.

If these proposed wells should encounter oil or gas in commercial quantities it is quite probable that Kansas City area would receive a very extensive play for it is naturally quite desirable to develop these products adjacent to such a large territory of consumption and in addition to that there is ample capital in Kansas City and vicinity and a community spirit that would aid in the financing of these wells.

With these possibilities this area will receive considerable attention in the near future and will bear watching for if oil can be developed in that portion of Kansas and Missouri it may lead to an extension of the exploration work to other districts in the Missouri River Valley and Missouri may be the next state to enter the group of oil producers, something that everyone living there would welcome heartily.

ELECTRIC HEATERS REMOVE PARAFFIN

(Continued from Page 42)

gas. This is a good argument for the maintenance of a low gas-oil ratio under such conditions.

If the velocity of the upward flowing stream of fluid is reduced or the flow is intermittent there seems to be still greater tendency for the solids to precipitate out of the oil.

If the waxy deposition is covered with some oil at all times it will not harden as it does when the well flows by heads and after the waxy mass has been deposited it is drained of the fluid that covered it and exposed to the gas and oxygen in the hole.

To relieve this condition of hardening of the wax on the walls of the casing it is suggested that the well be so tubed that its flow will be more constant.

Heating Devices

Some experimental work has been done with heating devices placed in the well and the temperature raised by means of steam forced down one run of the small tubes and returned to the surface by a second string, the two steam lines being connected at the bottom by any one of several different types of heating coils.

This method has its disadvantages in that the steam will condense and the water will form a plug at the bottom of the steam line and where the wells have any considerable depth this water at the bottom of the steam line will build up a resistance difficult for the steam pressure to overcome.

It is possible in some types of wells to leave the coils open at the bottom and blow the live steam and hot water directly into the fluid column in the well, but if the oil has a tendency to emulsify when mixed with water this practice cannot be followed.

Electric heaters have long presented many possibilities in the way of overcoming this problem of paraffining of wells, but the principal objections found with such heaters as have been tried was the difficulty in finding heating elements that were suited to this submerged type of duty, and the securing of moisture proof cables that could be used to conduct the electric current to the heating elements at the bottom of the hole.

Cleaning Wells

The problem of cleaning wells of paraffin and solid incrustations is by no means limited to the flowing wells where cooling gases assist in this work, but it has long been recognized as one of the important duties of the lease man to keep his pumping wells in a clean condition.

Cleaning in this case means the removal of sediment from the bottom of the hole, taking out the cavings that have fallen from the uncased walls of the well, and the removal of paraffin and precipitates from the walls of the producing horizon and tubing or casing.

After the debris has been bailed out of the hole with the ordinary bailer or sand pump, following agitation with a cleanout string of tools and the walls exposed, it has been found that a light shot of nitroglycerin will tend to break away the crust of paraffin on the walls and bring down as well a thin shell of sand behind it and in this way expose new drainage openings for the oil.

Use of Solvents

Other methods of removing the paraffin is to use various types of solvents such as gasoline, kerosene, calcium carbide, a mixture of caustic soda and aluminum, sodium peroxide, hydrochloric acid and combinations of the above reagents that have a tendency to dissolve the precipitates from the well walls.

All of these methods have their advantages and disadvantages, but to be most effective nearly all of them must be poured into the well hot and as rapid cooling follows when the solvent reaches the bottom of the hole its effectiveness is usually materially reduced below its theoretical value.

So the idea of heating the walls of the producing sands has always had a strong appeal to the production man and it is found that burning the paraffin from the face of the sand was tried as far back as October, 1920, by the Smith-Dunn Co. in a well near Marietta, Ohio.

The method used consisted of dropping oil-soaked waste that had been lighted into the hole where the Smith-Dunn compressed air process was being used. Air and natural gas in this well made a combustible mixture which was ignited and burned for 24 hours. The fire was confined to the lower part of the well and was extinguished by pouring a few buckets of water in at the top of the well. This treatment increased the rate of production for that well about 100 per cent.

The Hope Natural Gas Co. used a mixture of gas and air forced into the well by use of a compressor and ignited at the bottom of the hole by means of a fuse lowered through the tubing. As little formation gas was present in this West Virginia well where the experiment was tried it was found possible to raise the temperature at the sands to about 2,300 degrees Fahrenheit.

Compressed Air

The Smith-Dunn Co. later worked out a method of cleaning wells by the use of compressed air which has been described in various articles and this is still being used with considerable success in some fields.

Several types of electric heaters have been developed and tried but mechanical troubles seem to have been experienced with most of them and they are not very generally used.

Record of one set of test cleanings done with an electric heater has been made available and are given below.

The test was made on the Prairie Oil & Gas Co., R. S. Litchfield lease in the W half of the NW of Section 22-17-7, Cushing district, Creek County, Oklahoma, in January, 1926, and the heater used is described as being 14 feet long and 4 inches in diameter and made from heavy steel tubing that encases six heating elements that require approximately 24 kilowatts of 440 volt current, either alternative or direct type, at 60 amperes. Assembled the heater weighs about 300 pounds.

It was lowered into the well by means of a 1-inch cable with a copper wire inside for transmitting the current. Considerable trouble was experienced in finding suitable electric cable for this purpose when the Prairie Oil & Gas Co. test was made, but it is understood that since then the electric companies have developed moisture proof electric cable that is being used for several purposes in producing wells, as for example, to conduct current to multistage centrifugal electric motor driven pumps that are placed at the bottom of the well, and electric type recording devices for securing the deflection of hole in drilled wells.

It is further suggested that for wells of shallow depth the heater can be lowered into the hole with insulated rods inserted in the 2-inch tubing. This latter method would hardly be practical for very deep wells, especially in view of the fact that armoured cable that is moisture-proof is now available.

Results of Tests

Five wells were tested on the Prairie Oil & Gas Co.'s Litchfield lease, but the results obtained on the first two cleaned were much better than on the other three and the table given below therefore covers No. 8 and No. 29 wells, those first tested.

These figures represent a very interesting study of the possibility of cleaning wells by this method and we are indebted to J. A. Alspach, district superintendent

of the Drumright district for the Prairie Oil & Gas Co., for them.

Heating Process

Mr. Alspach further states:

"The process of heating these wells caused the walls to cave or fall in, which necessitated cleaning out after heating that resulted in the removal of all parts of the sand that was covered with paraffin. This heating process after cleaning out stopped all trouble as to pulling rods for worn out cups and the wells gave us no trouble and at the end of 282 days, which was the last 30 days' test we gave them (see table), the two wells were still making their increased production.

"For some time prior to the heating of these wells there had been a vacuum carried in them of from 25 to 26 inches, and just before running the heater for the first time we found we had only 43 feet of oil in the well, but as the heat kept increasing up to the next to last heat run we had 87 feet of oil in the hole, however, in starting the heater in the well the last run we found there was but 37 feet of oil in the well for the reason that the clogged and paraffined pores of the producing stand had been heated and opened up sufficiently so that the vacuum pulling from the surrounding wells had pulled the oil away from the well being heated to the extent that the column of oil in the well had been reduced from 87 feet to 37 feet at the conclusion of the test. The figures given in the table were furnished by the Petroleum Conservation Corp. of Oklahoma City after 282 days pumping after heating."

Cost of Heating

The Petroleum Conservation Corp. has been succeeded by the Oil Wells Renewal Co. of Oklahoma, with offices in Oklahoma City and it is understood that the time necessary for heating a well depends upon the character of the structure but it has been found by experimenting that from 36 to 48 hours' continuous heating will produce the desired results.

Upon the basis of using 24 kilowatts of power per hour at a cost of $0.04 per kilowatt heating a well would cost about $0.96 per hour, or for the 24-hour period about $24, and if this will give the increase in production as indicated the cost should be justified.

It does seem that caving of the walls of the producing sand follows heating and this will necessitate cleaning of the hole which will mean additional shut-down time and higher cost for the job, but on the other hand it is stated that the wells referred to were giving considerable trouble with wear of the cups in the working barrel before the well was cleaned and afterward this trouble was almost entirely eliminated.

Other wells heated did not seem to give correspondingly good results, but this was probably due largely to the fact that mechanical troubles prevented the heater being kept in continuous operation long enough at a time to bring the oil to the desired temperature to get good results.

It is recognized that these tests have been limited in number and not enough data are now available to determine whether the cost of cleaning by electric heating methods will be justified if the period over which the increased production is maintained is short, but as one of the principal mechanical difficulties experienced in these early tests was due to poorly insulated cable for conducting the current to the heating elements and the elements themselves were not as sturdy as those now available it would seem that more recent improvement in these two details should aid materially in making electric heating of old wells economical.

	Litchfield Farm Wells	
	No. 8 well 40-day record of results*	No. 29 well 30-day record of results*
Wells producing since	1915	1915
Depth of wells	2,875 ft.	2,828 ft.
Producing sand	Bartlesville	Bartlesville
Thickness of sand body	105 ft.	95 ft.
Initial flush production	1,600 bbls.	2,400 bbls.
Vacuum on wells	26 in.	26 in.
Number of times wells shot	6	2
Water produced per day	½ bbl.	1 bbl.
Gravity of oil	40 to 42 deg.	41 to 42 deg.
Gas accompanying oil before heating	2,500 cu. ft.	.....?
Date of heating wells	Jan. 7-12, 1926	Feb. 26-Mch. 15, 1926
Fluid level in well before heating	32 ft.	39 ft.
Fluid level in well after heating	75 ft.	80 ft.
Oil temperature in well before heating	84 deg. Fah.	84 deg. Fah.
Oil temperature in well after heating	160 deg. Fah.	180 deg. Fah.
Oil production per day before heating	7½ bbls.	8¾ bbls.
Oil production per day after heating	34¾ bbls.	21.85 bbls.
Total production, test period*, before heating	300 bbls.	262½ bbls.
Total production, test period*, after heating	1,390 bbls.	655½ bbls.
Production gained after heating	1,090 bbls.	393 bbls.
Per cent gain production by heating	363.84 per cent	149.52 per cent

IMPORTANT DISCOVERY IN WYOMING AREA

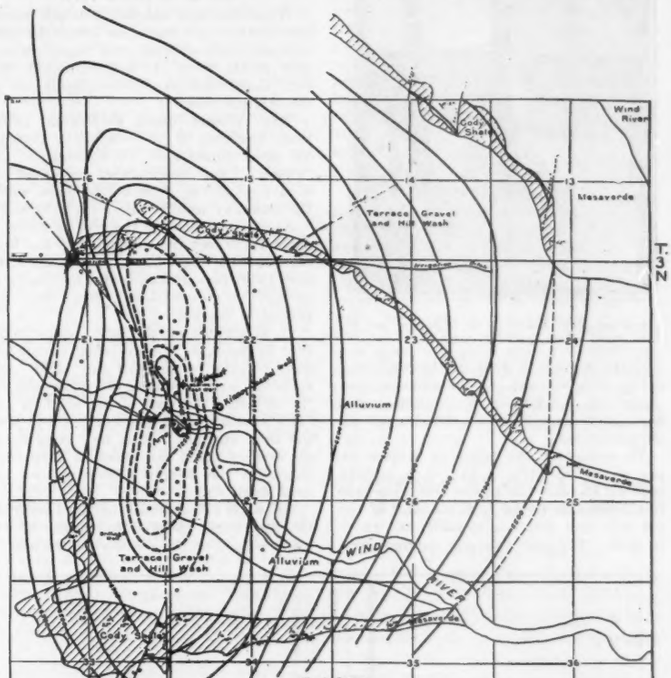
(Continued from Page 42)

doned at a reported depth of 3,315 feet with a hole full of water. Apparently, it did not reach the sands in the Dakota formation. At that time the geologists had little faith in the possibilities of oil in horizons below the Frontier, or Wall Creek formation which lies in about the middle of the Mancos shale of Cretaceous age. It will be recalled that Salt Creek was then producing from the first Wall Creek (Frontier) and that it was just about that time that E. T. Williams drilled down on the edge of Salt Creek and found oil in the second Wall Creek. The Dakota was believed to carry only artesian water in the sands of that formation, and few operators cared to go to the expense of drilling it. Subsequent to the making of this test, there were a few courageous operators who decided to go deeper. The Ohio Oil Co. found oil in the Dakota formation of lower Cretaceous age at Rock Creek, and oil was then found in the Lakota at Mule Creek, and several other places. In 1923-24 two widely separated discoveries in the Dakota sands were made in Colorado at Wellington and on the Moffat Dome. Salt Creek found oil in the Lakota, a member of the Dakota group, and Lance Creek and other fields yielded the same result. The Argo Oil Co. then went back to Pilot Butte and spotted a test to the Dakota in the NW NW Section 27-3n-1w. This was in 1925. The well was drilled to a reported depth of 3,205 feet. At 2,900 feet, probably in the Mancos shale, it had 2,000 feet of oil in the hole and looked encouraging, but water later came in and the well was abandoned. The hole had been reduced to 2¾ inches and could not be drilled deeper. It is not certain whether it reached the Dakota formation or whether the water was bottom water or from above.

Testing Other Fields

In the interval between the drilling of this well and the starting of the Kinney-Coastal test, there was deeper testing in various fields. The Sundance of Jurassic age was found highly productive in Salt Creek, in Carbon County, Wyoming, on the Moffat and Iles Domes in Colorado, and in other localities. The Morrison, which lies between the Dakota series and the Sundance, also was found productive in several areas. In 1928, the Texas Production Co. drilled a test on the SE NW, Section 1-33-95, Alkali Butte Dome, 40 miles to the southeast of Pilot Butte, and found a commercial producer above the Dakota at 3,978 feet, putting 500 bbls. into the tank in 17 hours. It was drilled down to the Morrison at a total depth of 4,240 feet and plugged back and completed at 4,175 feet. It did not reach the Sundance, but the results were so encouraging that the Kinney-Coastal company decided upon another deep test for Pilot Butte. It chose a location one-fourth of a mile to the southeast of the Midwest well and the same distance northeast of the Argo test and started moving in in the winter of 1928 with the intention of testing all horizons down to the Sundance.

The Frontier sands, which contained water, were cased off with the 10-inch at 2,665 feet and at 3,300 feet it began having shows of oil and gas. At 3,358 feet, total depth, it stopped to test a showing at 3,317-40 feet which had made some small flows by heads with about 2,000,000 feet of gas a day. The showing was shot and after cleaning out it amounted to about 35 to 40 bbls. a day of 37 gravity oil. Oil in the other deep wells at this horizon tested 47 gravity and the conclusion was that in the Kinney-Coastal well it was coming up from below. The hole was then cored 27 feet deeper and the gas increased to 5,000,000 feet and was accompanied by sprays of distillates. Operations were shut down to install a control head, move the boiler back and prepare to drill in. The first week in October, the accumulated gas pressure blew the tools 1,000 feet up the hole during the night. There they stuck and the next day while trying to loosen them, the well blew in and went wild. H. O. Megowan, a driller was killed. The flow of gas was estimated at anywhere from 30,000,000 to 60,000,000 feet. Preparations were at once started to shut in the well. It was necessary to clear the ground, pull down the derrick and get the debris out of the way. A 2,800-pound 12½-inch valve was ordered. After blowing for 17 days, a gauge was taken and the well showed an open flow of 63,348,000 feet a day.



Geologic map of Pilot Butte structure, Fremont County, Wyoming.

Speculate on Sand

The general opinion of geologists is that the gas is coming from a sand in the base of the Thermopolis shale in the lower beds of the Mancos, or the Muddy sand of the drillers. This sand is supposed to lie about 150 feet above the Dakota and in some districts it is known as the first of the Dakota series. Beneath the Dakota sand is the Lakota, which is productive at Salt Creek, Mule Creek and in other fields, and then the sands of the Morrison formation followed by the Sundance. The latter was the objective of the drill in this well. The pressure in this well is too great to take the risk of attempting to drill deeper and it has been completed as a gas well. While the company primarily was exploring for oil, the immense gas pressure indicates the presence of a gas pool which in itself may prove to be very profitable as it may be the key to an ample supply of gas to justify extensive pipe line construction which has been under consideration by several interests. However, the gas is extremely wet and the probability of encountering oil in other wells is very encouraging.

The formation at the surface of the structure is the Pierre, or Mancos shale as it is sometimes known, and the escarpment around the dome is composed of Mesaverde sandstone. It is estimated that all sands down to and including the Sundance can be reached at a depth of not more than 4,500 feet from the surface. The elevation of the well is approximately 5,500 feet above sea level. The well has been shut in, but a test of the pressure and flow has not yet been completed.

Option on Holdings

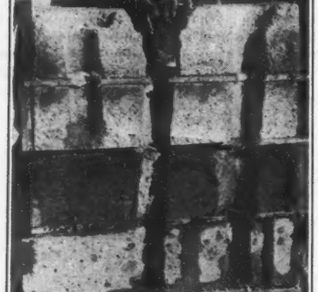
The Kinney-Coastal Oil Co. and the Argo Oil Co. are the principal holders of leases and acreage on the structure. When the Kinney-Coastal company planned the deep test, it took an option to purchase on the Argo holdings and when this deal is completed, the holding company will have approximately 3,000 acres most of which is on the structure within the closure. The dome has a closure of approximately 1,000 feet. The structure dips gently towards the east and north where it has a very large gathering area, but on the west the dips are much steeper. The structure parallels on the north the line of folding to the south upon which is located the Dallas, Derby, Hudson and other producing structures.

The Kinney-Coastal company has been active in wildcatting for a number of years and was formed as a merger several years ago of the Kinney Oil & Refining Co. and the Coastal Plains Oil Co. It has acreage and royalty interests in a number of fields in the Rocky Mountain and other areas and has been producing since 1917. Karl C. Schuyler, one of the organizers of the Midwest Oil Co., is president; E. D. Milliken, vice president; J. L. Warren, treasurer; and J. A. Warren, secretary.

MINIATURE RIG FOR CROOKED HOLE TESTS

(Continued from Page 41)

tests showed that at 256 feet the hole deviated off perpendicular five degrees; at 650 feet it was off 8 degrees and 30 minutes; at 1,043 feet, 14 degrees, and at 1,571 feet, 20 degrees. Had it been possible to operate a drill in the well to a depth of 5,000 feet, at the same rate of curvature, the bottom of the hole would have been something like 60 degrees off perpendicular.



Showing slant taken by drill during one of the drilling tests.

To straighten the hole, the drillers began redrilling with a 14¾-inch rotary shoe at 30 feet. With the rotary, it was found possible to cut into the wall of the old hole and obtain a shoulder on which to drill. The new hole was carried down 150 feet with the rotary shoe, at which depth the roller bit was substituted. At the point where the original hole had first started to curve badly it was discovered by means of a light test that it was again deviating from the perpendicular and was immediately straightened. Roller and cone bits were used from 250 feet to 308 feet. At the latter depth, a light test showed the hole to be straight. At 308 feet drilling was resumed with a roller bit using a special type of side cutters. The light showed a straight hole at 420 feet. Except for an occasional run with a cone bit the hole was redrilled to 1,101 feet with a roller bit using an 80-foot drill collar.

Out of Original Hole

When the hole reached a depth where the electric light could no longer be used accurately the drilling crew began making acid bottle tests. At approximately 650 feet, the drilled passed completely out of the original hole.

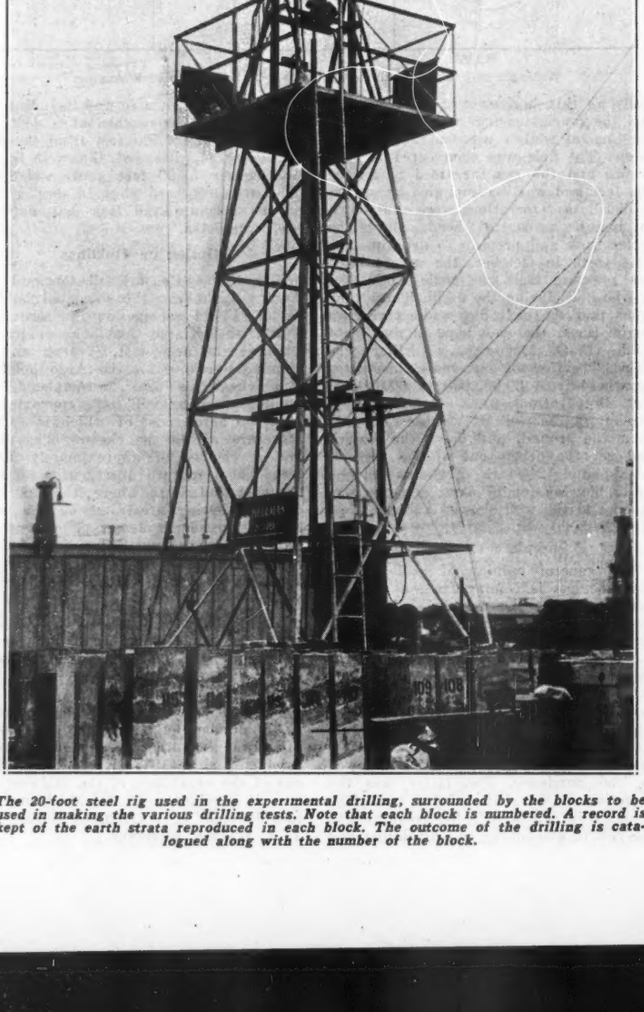
"Hy" Winter, Santa Fe Springs petroleum engineer of the company, through his development and refinement of the "go-devil" has considerably increased the accuracy of the acid bottle tests which the company uses in all of its field work.

At the present time the redrilled hole is down 1,690 feet and no deviation has been recorded at that depth. Between 1,101 and 1,690 feet it was found necessary to correct for an occasional bend that appeared in the hole.

In straightening the hole it was found that by using a rotary shoe, removing some of the weight off the drill ,and speeding up the rotary, the bit would cut its way into the wall of the old hole and after establishing a shoulder, would keep the hole straight. This has resulted in all drillers being cautioned to keep close check on the weight maintained on the drill stem.

All wells being drilled by the Union Oil Co. are being checked by means of the electric light at the shallow depths and by the acid bottle as soon as they are too deep to use the light. By this means the kinks in the well are discovered while it is still possible to correct them. Keeping the holes straight has cut down the average distance covered in a drilling day, but the loss of "yardage" is by no means comparable with the benefits gained.

While the heads of the field department of the Union Oil Co., as a result of actual drilling being conducted at this time, feel that they are approaching a definite solution to the crooked hole problem, they are watching with interest the Deminguez experiment well in the hope that further refinements of material aid to future drilling operations will be disclosed.



The 20-foot steel rig used in the experimental drilling, surrounded by the blocks to be used in making the various drilling tests. Note that each block is numbered. A record is kept of the earth strata reproduced in each block. The outcome of the drilling is catalogued along with the number of the block.

OIL DESIRABLE FOR HYDROGENATION PROCESS

(Continued from Page 138)

and Texas can be almost completely liquefied, he asserts.

Ash Has Little Influence

It appears that the per cent of ash has no major influence on the liquefaction yields, as the yield is in proportion to the organic content, Mr. Fieldner stated. Since the Bergius process can utilize low-rank, poor-quality coal for the production of oil, it would be an excellent outlet for the "fines" now so difficult to sell at many mines, provided a future oil shortage will render the process profitable, he added.

The yield obtained by the Bergius process from a typical gas-flame coal of 6 per cent ash content in gallons per short ton of coal is about 48 gallons of motor fuel, 54 gallons of Diesel engine and creosote oils, 16 gallons of lubricating oils, and 22 gallons of fuel oils—a total of 140 gallons of refined products, according to figures made available by Mr. Fieldner.

Other Methods

There are also other schemes for getting oil from coal, but the amounts of oil produced are more limited, Mr. Fieldner said. One method is by high temperature carbonizing of coal, such as coking, he stated. One plant at Pittsburgh, Pa., is using 30,000 tons of coal a day, he said. Ten gallons of tar are produced from each ton of coal or a total of 300,000 gallons daily, from which can be produced carbolic acid, naphthalene, creosote oil for wood preserving, and anthracene for use in making dyes.

Most of this tar is used for fuel, but three gallons of motor benzol can be distilled out for every ton of coal consumed. This can be blended with gasoline and made into high-grade antiknock motor fuel, selling for 2 or 3 cents more a gallon than ordinary gasoline. These products are being made at a number of plants over the country, according to Mr. Fieldner.

Second Method Explained

Low-temperature carbonization of coal is still another process which can add to the future motor fuel supply, he stated. By it, coal is heated at about half the temperature used in high-temperature carbonization. The tar yields are about three times as great, Mr. Fieldner said. Low-temperature tar consists of a third to a half tar acids and higher phenols, and the remaining substances are hydrocarbons, so that it resembles petroleum in some respects, he explained. It does not contain benzene, toluene, naphthalene, or anthracene, and contains very little phenol or cresol, which are found in high-temperature tar, he added.

The tar can be cracked into a 25 per cent yield of motor fuel, Mr. Fieldner stated. Thus the amount of by-product motor fuel obtained from this source cannot be more than supplementary in amount and will depend on the market for solid fuel produced in the process, he pointed out.

Coal can also be made into gasoline substitutes by way of complete gasification of either coal or coke, with subsequent conversion of the gas into alcohols or hydrocarbons, Mr. Fieldner stated. This conversion is possible by the use of suitable catalysts, and under certain conditions of temperature and pressure, which cause the hydrogen and carbon monoxide of water gas to react chemically and form alcohols or hydrocarbons, according to the catalyst and conditions of the process, he explained.

When prices of gasoline begin to rise and a pinch starts to be felt because of the diminishing supply of petroleum, it is likely that gasoline from coal will be produced at first only as a by-product, and then later, perhaps, as a primary product, Mr. Fieldner asserted.

OILS HELD DOWN BY MARKET WEAKNESS

(Continued from Page 145)

idend of 50 cents and the regular quarterly dividend of 50 cents, both payable December 14 to stock of record November 15. Three months ago an extra dividend of 25 cents was paid.

Richfield Oil

Richfield Oil Co. of California, including Pan American Western Petroleum Co. and subsidiaries from April 1 but excluding Richfield Oil Corp. of New York, reports for nine months ended September 30, 1929, net income of $6,427,340 after charges, federal taxes, depreciation and depletion, equivalent after allowing for dividend requirements on 7 per cent preferred stock, to $3.05 a share (par $25) on 1,947,000 shares of common stock. For the first nine months of 1928, company reported net income of $5,455,193 excluding Pan American Western Petroleum Co., equal to $2.66 a share on 1,855,833 common shares.

Vacuum Oil

Vacuum Oil announces that a quarterly dividend on the issued shares of the par value of $25.00 each, at the rate of $1 per share, and a special year end dividend of 25 cents per share, have been declared, payable December 20, 1929, to stockholders of record at the close of business November 30, 1929.

Royal Dutch

The board of directors of the Royal Dutch Petroleum Co., meeting in Amsterdam, Holland, stated to stockholders that preference to shareholders in any coming issue will be maintained, adding that the company was in a highly satisfactory condition.

Owing to representation of insufficient capital stock at the meeting, the vote on the proposal to increase the capital of the company from 600,000,000 to 1,000,000,000 guilders was postponed until a later meeting, to be held November 20.

The stockholders will also at that time vote on a proposed amendment to the articles of association to eliminate the requirement of the shareholders' consent to the raising of debenture loans and to conform the articles of association to the new companies act, and other minor amendments.

M'QUEEN VISITS ALBERTA

CHATHAM, Ontario, Nov. 9.—A. M. McQueen of Toronto, vice president of Imperial Oil, Ltd., recently inspected the company's development work in Alberta. "Imperial Oil, Ltd., is spending a great deal of money in Turner Valley development," stated Mr. McQueen, "and the company certainly would not do that unless it had faith in the field. The situation at Turner Valley at present is most encouraging. The Imperial has a large number of rigs in the field and is naturally vitally interested in its future," Mr. McQueen added that he had no announcement to make as to any extension of Imperial activities.

IMPERIAL CONTROLS AIRWAYS

CHATHAM, Ontario, Nov. 9.—Directors of the Atlantic & Pacific Airways Co. have sanctioned the offer of Imperial Oil, Ltd., of Toronto for a large block of the Airways stock, and as a result control of the aviation company will pass to Imperial Oil, Ltd. Plans are being made to extend and improve the airport at Sarnia, Ontario, as one, it is understood, of a continent-wide chain of airports to be used by the company.

Field of Special Uses of Gas Lift

Constantly Changing and What May Be New Today Is Old Tomorrow. Some of the Specialties Employed

Prepared by R. H. Pence for the Bessemer Gas Engine Co.

The field of special uses of the lift is constantly changing and what may be new today is old tomorrow. For this reason brief mention only will be made of the specialties now in use.

The Intermittent Lift

On wells making small production the intermittent lift has proven itself successful. It consist of nothing more than a confined volume of oil being forced upward into a tube in which a small port is located just above the fluid level and in which gas is admitted to lift the oil to the surface. In other words, an artificial submergence is created.

The fluid is allowed to accumulate in the well against no back pressure except its own head and then lifted to the surface intermittently. The time between flow periods is governed by amount of oil that can be produced per day. Calculations are essentially the same as given for the continuous lift.

The methods employed for trapping the fluid in the well while the lift is in operation, vary and depend upon the rock pressure and formation characteristics. If the sand is compact and a fairly high rock pressure exists the hookup is essentially the same as in the continuous lift except for the small orifice at the pumping fluid level. This method depends upon the resistance the formation will offer to back flow of the oil. In other words, the fluid will be lifted from the well faster than it can flow back into the formation.

Tubing Shield

If there are thief sands, or sands of lower formation pressure above the bottom sand, a tubing shield may be run and the tubing run inside of this. The gas is then injected into the tubing shield instead of in the casing, and flow established through the inner tubing.

To eliminate the greater part of the tubing shield a special relief packer may be set above the thief sands and the shield carried below it. This allows a greater flow area in wells of small bore and which are producing 50 bbls. or better per day. On wells of this type, on which the special packer is used, the small orifice in the tubing above the pumping fluid level is often omitted. If the bottom sand will not resist the back flow of the oil to such an extent that the major part of the accumulated oil may be lifted, then this arrangement will not be satisfactory.

If the producing sand is of open texture and very low pressure, a packer may be run in the hole on the end of the tubing and set above the shot hole, or where formations exist, just above the perforations or liner. A check or standing valve is placed immediately above or below the packer on the tubing, and large ports are made in the tubing just above the packer. In this manner the influx oil can accumulate above the packer through this valve and, when gas is injected into the annular space, the increased pressure above the valve will cause it to close and thus effectively trap the oil and allow no added pressure on the formation. This method is extensively used and the only objection to its use is the occasional replacement of the valve. Where the pumping fluid level, in wells with perforations, does not rise above the top of the perforations, a tubing shield with a check or standing valve must be run in the hole, for obviously a packer may not with safety be set below the top of the perforations. The tubing is then run inside this shield and intermittent flow established through this tubing. This latter type of hookup has proven entirely successful.

The second small orifice, or port, located some distance above the first orifice at the pumping fluid level, is made as a precautionary measure so that if the fluid level should rise above the first orifice the formational gas will have ample chance to bleed away without establishing an added back pressure on the formation. However, on wells of very small production which are blown but once a day or less, the formational gas is usually collected at the casinghead for fuel purposes.

Separators

In the intermittent lift separators may be used on the discharge line the same as in the continuous lift. However, on very small wells, especially where air is used as the lifting agent, no separator is used and the oil is discharged directly into the make tank. This does not necessarily mean that the formational gas is lost to the atmosphere, for on wells equipped with the tubing shield the formational gas is free to rise above the fluid surrounding the shield and may be collected at the casinghead in the usual manner.

The volume of gas injected in the well during the flow period is usually of a considerable amount per second, for the fluid is lifted rapidly. However, this volume is in keeping with the gas-oil ratios attained in the continuous lift and, where the intermittent type is especially adaptable, the gas-oil ratio is in its favor. The pressure necessary to establish flow in the intermittent lift is usually in excess of the continuous lift, for the acceleration is greater due to lifting a greater weight per second.

Intermitting a well is another method of controlling the volume of gas to that well. Operating a number of wells from the pool system on the continuous lift, necessitates the division of all of the gas at the same time, while on the intermittent lift all of the gas is given to one well for a definite length of time and then to another for a different length of time, and so on.

Intermitters

To control the length of time the gas is given to one well there are several methods in use. The first method is the oldest and that is manual control. The operator may go to each well and shoot the gas to it from a feeder line coming from the nearby main line, or the feeder lines may radiate from the compressor plant to the different wells and in this case the operator remains at the compression plant and times the wells. Obviously this method is only adaptable with economy to those properties with low unit production. Manual control is extensively used in the old Eastern fields in connection with the repressuring process.

The second method employs a mechanical timer to automatically open and close valves on individual feeder lines to each well from the compressors. This device is driven from the prime mover or by separate power, such as a small electric motor. The method has given entirely satisfactory results and is extensively used in California fields.

The third method employs an electrical timer which at definite intervals sends a current of electricity over wires to each well and there opens an electrically operated valve on the gas line. The valve remains open until the current is cut off at the compressor plant and then automatically closes. The method is finding considerable use in Mid-Continent and California fields. This method necessitates only a main distribution line from the compressor plant as the wires take the place of the individual lines necessitated in the second method.

Displacement Flow

The displacement method of producing oil is one invented of necessity. The object of this method is to displace oil in the tubing or eductor with gas without mixing the two intimately as in the lift, in an endeavor to produce wet wells with a minimum emulsion. Displacing the oil intermittently with a sudden shot of large volume high pressure gas has been found to lift the fluid in slugs with a minimum of churning and blowing as takes place in the regular lift. Much experimental work is being done on this method and without doubt it will come into common use soon.

The timing of the gas injecting periods is done either from the surface or at the bottom of the well. The bottom intermitters usually work on a differential principle. When there is a given head of fluid in the hole the device will open and allow gas to slug the fluid out and when the head has diminished to such a point the device will close and cut the gas off. When perfected the latter type will be of real value in producing wet wells that form bad emulsions when placed on the regular lift.

Stage Lifting

Stage lifting is undergoing severe experimental work in an effort to produce small wells from the natural power stored in the escaping formational gas. In other words, a well so equipped and in operation would flow without outside aid. Several actual installations have been made and it is expected that in the near future it will come into common use.

Foot Pieces

Undoubtedly this one topic has been the choice subject of debate among gas lift men for some time past. Theoretically, a foot piece composed of a standard Ventura tube with perforations to allow the mixing of gas with the oil should give better results than an open-end eductor for the reason that better mixing and better velocities are attained at this point. However, there has been no conclusive evidence showing the superiority of a well equipped with such a mixer over a well not so equipped.

It is common practice, however, to place a series of ports in the tubing several feet above the bottom where tubing flow is used. This allows the oil to rise into the tubing with the gas without being partially "coned" off. It is claimed that if a series of rings of these ports are placed in the tubing near the bottom that a governing effect will be obtained; that is, if either the oil or the gas varies in quantity a more or less number of these rings of ports will be uncovered for the gas entrance to the eductor.

In casing flow a deflector consisting of a somewhat larger bullplug welded in two or more places to the bottom of the tubing is commonly used to reverse the direction of the gas at the foot of the eductor.

Tubing Catchers

Tubing catchers are a real safeguard to the tubing and are almost universally used in deep wells. Where casing flow is used it is necessary to obtain a tubing catcher with ample by-pass area or a diminished flow of oil will result.

Kick-Off Valves

High starting pressures have usually been a source of trouble to operators of the continuous lift. For this reason many devices have been put on the market for starting the well at a pressure not greatly in excess of its operating pressure. These devices either operate manually from the surface or are automatic in their operation. The latter type are having quite a run and if they serve their purpose without bypassing gas they are an asset.

Volume Regulator

Operating wells on the continuous lift with the pool or multi-pool system necessitates the use of a volume regulator on the input gas line. There are a number of these on the market, some self volume recording and others necessitating a separate meter. Some experiments are being made at this time on constant flow regulators to act irrespective of pressure. Such a regulator would not necessitate a meter.

Five Spotting

Five spotting is the popular name given the practice of repressuring new sands, or rather, sustaining the rock pressure of newly tapped sands. In this practice the period of natural flow of the wells is prolonged by injecting a part, or all, of the gas that comes from the wells back into a central well or wells and allowing the gas to expand over and over again and drive the oil to the wells and then lift the oil to the surface. High pressures are encountered but it is claimed that large benefits result. Several installations are in operation in the California fields.

*This is the ninth of a series of articles on air and gas lift. The first article of the series was published in the April 18 issue of The Oil and Gas Journal; the second, May 2; the third, May 30; the fourth, July 11; the fifth, August 15; the sixth, August 22; the seventh, September 12, and the eighth, September 26.

GOVERNMENT DATA SHOW NEED OF CURTAILMENT

(Continued from Page 40)

period last year. This clearly reflects the fact that the West Coast producers in reducing their output must take into consideration the fact that the improved quality of their crude oil from the standpoint of gasoline yield plus improved refinery processing to a large extent will take care of the increased demand so that very little additional crude oil will be required to take care of the increase in motor fuel consumption in their normal marketing territory.

East of California

The curtailment program which has been made effective in Oklahoma, Kansas and Texas should take up any slack in demand due to the approach of the winter season. Despite a relatively high rate of production there was no surplus of crude oil in September for the area east of California.

With a curtailment program in the flush fields effective this situation points to a continuance of present crude oil prices throughout the winter months. It is probable that some reductions in crude oil stocks will develop the remainder of this month and December.

Imports of Refinery Products

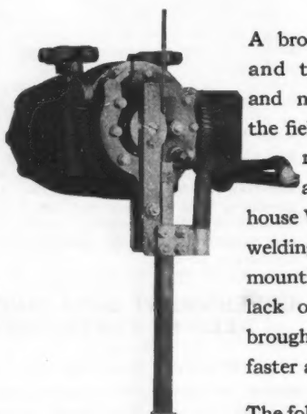
A trend in the import situation becomes more and more apparent each month. There has not been the increase in the imports of crude oil so far this year that there was in 1928 over 1927. In fact, in September the crude oil imports of 6,953,000 bbls. were less than the total of 7,138,000 bbls. in September, 1928. For the first nine months of this year the crude imports totaled 62,727,000 bbls., an increase of 5.7 per cent over the first nine months of 1928. Last year the increases were running as high as 50 per cent. While crude imports are practically at a standstill so far as increases are concerned, the imports of refinery products are increasing rapidly. For September, the imports of refined products totaled 2,725,000 bbls., compared with 598,000 bbls. in September, 1928. Imports of gasoline for the first nine months totaled 6,142,000 gallons or almost 100 per cent greater than the same period last year. Fuel oil and gas oil imports for the nine months totaled 13,-

NOW!

The Weldomatic!

AUTOMATIC WELDER

- - - A Real Shop Tool



A broader class of work—more sizes and types of boilers, tanks, pipes and machinery parts now move into the field of practical application of automatic arc welding for manufacture and for reclamation. The Westinghouse Weldomatic—a full automatic arc-welding machine—because of its compact mounting dimensions, adaptability and lack of delicate adjustments can be brought right up to the job to weld better, faster and at less cost.

The following are some of the advantages which the Weldomatic affords:

1. No clutches, relays, springs, etc., to wear or get out of adjustment. Electrical control replaces this combination.
2. The nozzle can be easily "spotted" forward and back, or across the seam.
3. The Weldomatic head is easily installed—four bolts through the base will hold it against a horizontal or vertical surface. This simplifies the design of the supporting structure.

The Weldomatic is entirely automatic. It feeds the electrode uniformly at the exact rate of consumption—maintaining a constant arc voltage, and therefore, the best welding arc—regardless of electrode size, welding current value or surface irregularities of the work.

WESTINGHOUSE ELECTRIC & MFG. CO.
EAST PITTSBURGH PENNSYLVANIA

SALES OFFICES AND SERVICE SHOPS IN ALL PRINCIPAL CITIES OF THE UNITED STATES

Westinghouse

T 30867-A

974,000 bbls. or 8,083,000 bbls. over the same period last year.

These increased imports reflect the enlarged refining capacity of plants operating with South American crude oils. The latest of these to start operating was the 100,000-bbl. plant of the Pan American Petroleum & Transport Co. This company is bringing part of its refinery output to east coast points where it is distributed by subsidiary companies.

While the volume of these imports as yet is not large enough to be a serious factor it is probable that they will materially increase in 1930. Thus, in time, the South American development might become more a factor in the refined markets of this country than in the crude oil market.

It has also been pointed out that the expansion of South American refining facilities has become a factor in the export market of refineries in this country. This is particularly true of gasoline and fuel oils. Last year there was a large increase in gasoline exports averaging approximately 20 per cent for the year. This year the percentage increase has not been as great as in the domestic market averaging 11.6 per cent for the first nine months. In September gasoline exports totaled 4,426,000 bbls., which was less than the 4,794,000-bbl. total for the same month in 1928.

Although it is unlikely that the September situation will be continued it is certain that the expansion of refining facilities in South America will absorb part of the foreign consuming market which otherwise would have looked to refineries in this country for their sources of supply.

Refinery Products

In regard to the refined products generally, the principal products have followed the lead of crude oil. A surplus of crude oil generally begets a surplus of the most important products secured by the refiner and the past year has been no exception.

Refiners had a 14.1 per cent increase in the total demand for gasoline the first nine months, a much larger gain than was anticipated. They met this large gain in consumption, however, with a 17 per cent gain in gasoline production so on September 30 gasoline stocks were 25.9 per cent greater than on the same date last year.

A study of the detailed figures of the Government over a period of years will show that the gasoline statistical situation is not as bad as might be indicated from a superficial study of the latest report. Gasoline stocks at refineries were exceptionally low a year ago and it was expected that a normal situation would develop this year. With the large increase in demand based on days' supply the gasoline storage on September 30 was not much larger than on the same date last year.

In regard to gasoline production, a substantial part of this increase as previously indicated has come from the California refineries. While this gasoline is a factor in the market generally, due to the fact that large quantities are brought around to the East Coast for distribution, the increase is not as important in the domestic market as it would have been had the gain come from the eastern refineries.

On the whole, the gasoline situation has been in much worse shape in the past than it is at the present time and should reflect the improved crude situation.

Fuel Oil and Gas Oil

While additions are still being made to fuel oil and gas oil storage a development which has been consistent over the past two years, the rate of increase has not been as large in recent months outside of California and several refining areas are in a better statistical position than at any time since 1926.

Some of the major refiners who have been forcing large quantities on the market since 1927 now have all the outlets needed and prices have been steadier.

Exports of fuel oil and gas oil so far this year, as shown in the table, have fallen off, a development which was no doubt brought about by the expansion of South American refineries. The exports dropped from 34,483,000 bbls. the first nine months of 1928 to 27,524,000 bbls. the first nine months of this year.

Kerosene and Lubricating Oil

Although the total demand for kerosene has been less than it was last year with only a small increase in the lubricating oil demand, both these products have occupied a relatively strong statistical position throughout the year due to the fact that the supply has been kept in line with the actual consumption requirements. The total kerosene demand for the first nine months was 3.2 per cent less than the same period in 1928. This was due to the fact that a 3 per cent increase in the domestic demand was more than offset with a 13 per cent decrease in exports.

The domestic production of kerosene decreased 5.7 per cent for the nine months' period so that in spite of a 13.4 per cent gain in imports the total supply was 5.6 per cent less than the same period last year. Due to this situation the demand for kerosene exceeded the supply for the first nine months of this year by 281,000 bbls. Last year for the same period stocks were increased 878,000 bbls.

In regard to lubricating oils the domestic demand the first nine months increased 5.7 per cent while exports declined 1.5 per cent resulting in a 3.3 per cent increase in total demand. The domestic production only increased .8 per cent and the total increase was less than 1 per cent. Lubricating oil refiners in this country drew on their storage 751,000 bbls. the first nine months of this year. Due to this strong statistical situation most grades of lubricating oils this year have been stronger than any other refined product.

Petroleum Wax

Although petroleum wax situation appears highly unfavorable when viewed from the nine-month angle there has been some improvements in recent months and wax manufacturers now believe that prices will show a gradual improvement. The market broke last year and the price decline continued through the first six months of 1929 when both the export and domestic demand slumped with an increase in supply. Stocks accumulated rapidly during this period.

Due to the unfavorable market, however, refiners have reduced their output and this coupled with an increase in demand is reversing the situation of a few months ago. In September the domestic production was 44,513,000 pounds which compares with a production of 53,377,000 pounds in the previous month and 50,428,000 pounds in September, 1928.

The domestic demand and exports in September were both greater than in September, 1928, so that approximately 7,000,000 pounds were withdrawn from storage.

Refinery Efficiency

Due largely to the increased yields secured by California refineries total gasoline recovery from crude oil continues to increase. For the first nine months of this year the increase in gasoline yield was 2.7 per cent. This increase accounted for approximately 18,000,000 bbls. of gasoline or over half of the increase in the domestic demand.

Refiners are using large quantities of natural gasoline for blending purposes at their refineries. Their purchases totaled 32,940,000 bbls. for the first nine months which was 7,471,000 bbls. or 29.3 per cent greater than the same period in 1928.

CANADIAN OIL POLICY

CHATHAM, Ontario, Nov. 9.—It has been intimated that in the near future Premier King will announce important changes in the policy of the Dominion government in relation to oil development in the Canadian West. The changes are designed to encourage development work and at the same time promote conservation of gas. It is understood important areas now withheld from leasing may be thrown open.

Dire Prediction of Early Day Geologist Confounded by Facts

Forty years ago, on Nov. 5, 1889, to be exact, a prominent geologist predicted that within five years the oil fields of New York, Pennsylvania and Ohio would be "utterly depleted." Reference is made to this prediction in the "40 Years Ago" column carried in the Bradford Era of November 6, 1929.

The Era does not name the geologist, and perhaps it is just as well, as it would be very embarrassing to him, if he is still in the land of the living, to have this prophecy thrown up to him at this time.

How far wrong the geologist was is attested by the fact that in five years the fields he condemned so glibly were producing more oil than they were when he made the prediction. In 1889 the New York, Pennsylvania and Ohio fields produced a total of 33,960,000 bbls., and in 1894 they produced 35,812,000 bbls.

At this time they are producing 60,000 bbls. a day or at the rate of 21,900,000 bbls. a year or about 66 per cent of what they were doing 40 years ago.

How little was known in those days of the mysteries of Mother Earth in so far as they related to petroleum can be seen when it is shown that New York was producing 5,200 bbls. a day 40 years ago and 9,900 bbls. a day at present with the source of the oil in the very same counties as four decades ago. Pennsylvania has fallen from 53,700 bbls. a day to 32,000 bbls. a day and Ohio from 34,200 bbls. to 18,100 bbls. a day.

The end of the N. Y., P. & O. fields was predicted for 1894 and from the day of their "death" to the close of 1928 they produced 827,312,000 bbls. of crude oil, divided as follows: New York, 40,815,000 bbls.; Pennsylvania, 364,371,000 bbls., and Ohio, 422,126,000 bbls. The combined production of the three states will be greater in 1929 than in 1928 through the use of modern production methods undreamed of 40 years ago, and the production of New York and Pennsylvania in 1930 is expected to exceed that of any year since the close of the nineteenth century.

FUEL OILS CONTINUE STRONG IN OKLAHOMA

(Continued from Page 36)

sources has made their position more secure.

Although this situation if it continues will inevitably force a general revision downward in retail prices, there are those who believe that the conditions will be remedied through an advance in refinery tank car prices which will narrow the wide spread which enables the price cutter to operate. This prediction is based on the changing crude oil situation. If the curtailment of crude oil production which has been made effective in Oklahoma and Kansas continues the crude oil market will be tight through the winter months instead of excess supplies being available as was thought probable a few weeks ago.

This is certain to be reflected in refinery operations. Refinery operators from whom the low priced gasolines have been available will probably find it expedient to reduce their supply to the point where they can advance their prices to the point where they at least break even in their operations.

Some refiners believe that the major distributors will wait to see the effect of the improved crude oil situation before making any general changes in tank wagon and retail prices. In this connection one refiner expressed the hope that gasoline prices through the winter months would continue at levels which would discourage any expansion in plant operations. This refiner hopes to see Mid-Continent refinery operations curtailed for the purpose of preventing large accumulations of gasoline in storage so that with the start of next season the industry will not be burdened with excessive inventories.

Natural gasoline manufacturers were having difficulty in maintaining prices the first of the week especially on the B, BB and C grades. The November contract business part of which was carried over from orders placed in October in most cases was for Grade AA material. In October all grades were strong and were sold at practically the same price so that buyers who purchased for November delivery made their orders for Grade AA.

The colder weather has increased the output of higher gravity grades so that the grades below Grade AA were freely offered on Monday and Tuesday at lower prices. On Tuesday the A and AA grades were available at 6½ and 6⅝ cents and the B and BB grades at 6⅜ cents. Grade C was slow at 6¼ to 6⅜ cents.

A shortage of tank cars continues to be a factor in the market. The long hauls being made to eastern refiners has brought a scarcity so many manufacturers are unwilling to sell for a short haul. Sellers in a position to make the long hauls have no difficulty in securing the maximum price.

At least two eastern refiners who bought last month were in the market again for small quantities. A Gulf Coast refiner is also reported to have made a large purchase.

Gasoline and Naphtha

Most of the Oklahoma refiners are quoting U. S. Motor gasoline from 7¼ to 7½ cents in sales to the trade. Spot business at these prices continues slow. Other refiners report a fair spot business at 6¾ to 7 cents although there do not appear to be many buyers at any price.

The higher gravity grades of gasoline are stronger. The deliveries being made on export orders has prevented large quantities of 400, 390 and 375 endpoint gasoline being thrown on the domestic market. The 360 and 350 endpoint grades are also strong. The low on the 400 endpoint the first of the week in Oklahoma was 7½ cents, 390, 7¾ cents and 375, 7⅞ cents. The 360 and 350 endpoint grades were moving the domestic trade at 8 and 8¼ cents.

The demand for kerosene has not improved and all grades are freely available at lower prices. A few refiners who had been quoting 5¼ cents to the trade for 41-43 water white kerosene lowered their price to 5 cents. Sales were made in Oklahoma as low at 4⅝ cents competing with a price of 4⅜ and 4½ cents.

The fact that several refiners are now operating their plants to secure 390 and 375 endpoint gasoline to apply on export orders has increased the yields of kerosene. In refining the regular U. S. Motor gasoline, plants operating with modern fractionating equipment secure a minimum yield of kerosene but with the higher gravity, lower endpoint grades it is usually necessary to increase the kerosene cut.

A few refiners at least are meeting this situation by securing a large cut of furnace oil distillate. By using a high gravity cut some refiners are able to take a low gravity gas oil from their cracking stills and by blending secure a high quality furnace oil.

Furnace oil distillates following the price decline of last week are fairly steady. The spot demand is not active but most refiners have contracts which take their entire output. Prices on the better grades of furnace oils ranged from 3⅝ to 4¼ cents.

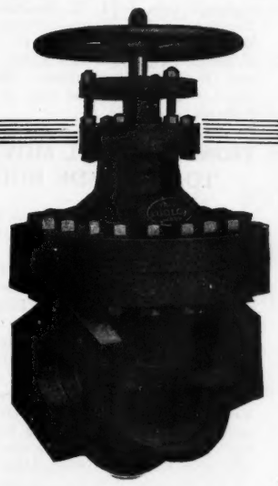
Fuel Oil and Gas Oil

The situation in regard to fuel oil has already been explained. The high gravity grades are practically unobtainable in Oklahoma.

The least desirable grades of gas oil slumped in price during the past week. Grades meeting U.G.I. specifications sold as low as 2¾ cents, a decline of one-quarter cent for the week.

Lubricants and Wax

A check of representative manufacturers of lubricating oils and wax failed to reveal any changes in prices. Trading is not active in any product except the finished motor oils. Most refiners are already sold up on bright stocks and the higher viscosity neutrals. The steam refined stocks are sluggish but prices are steady. Wax is quoted at 3 to 3⅛ cents.



IRON BODY
BRONZE MOUNTED
ALL IRON
CAST IRON
FOR
REFINERY
PIPELINE
DRILLING

Let Their Record Speak—

If you keep records on your valves you know that Ludlow Valves are dependable and that they give extra long service even under the hardest usage, with attention and maintenance nil.

LUDLOW
VALVES
ALL SIZES AND PRESSURES
HAND, CYLINDER, ELECTRIC OPERATED

DISTRIBUTED BY
MID-CONTINENT SUPPLY CO.
Houston Fort Worth

THE LUDLOW VALVE MFG. CO.
TROY, NEW YORK
KANSAS CITY CHICAGO NEW YORK BOSTON PITTSBURGH

Late Fields

(Continued from Page 48)

particular area. Previous production at Black Bayou has been in two small cap rock pumpers and in another deep flank test on the north side of the dome. The latter, which made considerable salt water, has stopped flowing and is being deepened.

OKLAHOMA

Production in the Oklahoma City Pool over the week-end was as follows: November 10, gauged 41,803 bbls. from 11 wells; November 11, 64,979 bbls. from 17 wells, and November 12, 78,263 bbls. from 19 wells. The gauges of November 12 by companies and leases were as follows:

Company and farm—	Bbls.
Coline:	
Olds	4,204
Cromwell et al:	
Trosper	3,217
Hall & Briscoe:	
Childs	7,281
I. T. I. C.:	
No. 2 A. Bodine	1,415
No. 1 S. Bodine	2,082
No. 2 S. Bodine	161
Button	2,814
Fuzzell	15,536
Thomas Fuzzell	shut in
Fee	1,754
Trosper	1,060
Mid-Kansas:	
No. 1 Fortson	2,288
No. 2 Fortson	1,926
Prairie:	
No. 1 Hiddleston	4,292
Shell:	
Petty	8,616
Sinclair:	
Kinter	190
Stamper	1,195
No. 2 Stamper	240
Slick:	
No. 1 Glidden	13,896
W. Franklin:	
No. 2 Lowery	5,596
Total	78,263

Tom Slick Oil Co.'s No. 1 Martin, C NW NW Section 13-13-1w, Oklahoma County, a wildcat, was drilling at 6,055 feet in dry sand. A core has been lost from 6,040.55 feet. Top of Wilcox was encountered at 6,015 feet.

The first showing of oil found in any of the wildcats now drilling in northwestern Oklahoma was in the Sinclair Oil & Gas Co.'s No. 1 Stewart, NE cor. SW Section 33-27-16w, Woods County, which encountered the showing at 5,405-15 feet, in sand, of the Oswego series. It was drilling deeper on November 12 at 5,555 feet.

The deepest test in the Mission Pool in Seminole County is the Gypsy Oil Co.'s No. 9 Barkus, NW cor. SW SW Section 6-8-6, which was drilling in what many believe to be the Arbuckle lime at 5,604 feet, on November 12.

East Earlsboro Pool gauged 28,337 bbls. from 48 wells, on November 12. The gauge by company and leases follows:

Company, farm—	Wells	Bbls.
Amerada, Sullivan	2	2,681
Barnsdall, Gillman	1	73
Barnsdall, Noble	3	40
Burke-Greis, Fixico	1	1,379
Carter, Wrightsman	1	Off
Gypsy, Noble	2	1,462
Gypsy, Payne	7	6,183
Magnolia, A. Anderson	10	4,494
Magnolia, D. W. Anderson	4	2,408
Magnolia, P. Anderson	1	234
Magnolia, Moore	2	614
Mid-Continent, McDaniels	1	585
Minnehoma, Noe	1	1,613
Prairie, Baker	5	935
Prairie, Calkins	2	2,345
Prairie, Raitman	3	2,640
Prairie, Wisener	1	40
Sinclair, Miller	1	629
Total	48	28,337

Mid-Continent Petroleum Corp.'s No. 13 Smith, a twin well to No. 12, located in the SE cor. NW SE, Section 5-7-7, East Little River Pool, Seminole County, had Cromwell sand at 3,185-3,200 feet, where it made 2,680 bbls. the first 24 hours. It is the only Cromwell sand well on the lease which has 12 completed Wilcox sand producers. The lease made a total of 8,115 bbls. on the gauge of November 12.

East Little River's production by companies and leases for November 12 amounted to 24,628 bbls. from 39 wells. The gauges by companies and leases were as follows:

Company, farm—	Wells	Bbls.
Continental, Harrison	5	2,028
Gypsy, Payne	6	3,545
Gypsy, Walker	1	355
Mid-Continent, Smith	13	8,115
Prairie, Lustey	1	20
Prairie, Saletka	1	off
Prairie, B. Smith	1	1,390
Prairie, Thomas	2	865
Prairie, Carr	1	25
Sinclair, Phillips	7	7,535
Texas, Chilcoat	1	750
Total	39	24,628

MICHIGAN

MUSKEGON, Mich., Nov. 12.—Daily production of the Mount Pleasant Field surpassed that of the Muskegon Field with the completion of a new 1,000-bbl. initial well in the Dundee formation. The new well is one of the few to exceed 1,000 bbls. a day initial in the Central Michigan Field. It is the Stork Oil Co.'s No. 4 J. Coon, SE NE, Section 12-14n-3w, Chippewa Township, Isabella County. Pay sands of the Dundee formation were struck Saturday, November 9, at 3,507 feet and the well came in as a big producer at 3,515-23 feet. It flowed 1,008 bbls. in the first 24 hours. Dundee limestone was topped 18 feet higher than in any other well in the field at 3,472 feet.

Mount Pleasant daily production is now estimated to be about 9,500 bbls., although exact figures have been withheld by the Pure Oil Co., operators of the only crude oil pipe line in the field.

Muskegon production averaged about 6,500 bbls. Dundee, and 525 bbls. Traverse daily for the week ending Monday, November 11, at 7 a.m. Saginaw produced 220 bbls. a day of Traverse crude. Together the three fields practically maintained Michigan's daily average of about 17,000 bbls. for the past few months.

WEST TEXAS

FORT WORTH, Tex., Nov. 12.—Big Lake Oil Co.'s No. 4-C University, the third deep producer in the Big Lake Field, Reagan County, Texas, flowed 310 bbls. with 6,000,000 feet of gas during 24 hours ending 7 a.m. this morning. It was shut in until pressure reached 1,400 pounds, then released in an effort to blow the tools out which are stuck 5 feet off bottom, but the expected result was not obtained. Cannot get fishing string down to tools on account of gas.

Beeman and others' No. 1 Kincaid and others, located in the east 80 acres of the west 176 acres, N half Section 80, Block 4, approximately three-quarters of a mile north of Cisco in Eastland County, is shut down at 3,480 feet flowing by heads estimated at 160 bbls. daily. This well encountered oil sands last week from 3,462-66 feet, 3,474 feet and the big pay at 3,476 feet. It is a rank wildcat.

THOMAS ARGUE DEAD

Thomas Argue, age 78, veteran of many oil fields, died in Long Beach, Calif., on Monday, November 11. Mr. Argue was a native of Canada. He worked and operated in the Venango and McKean County, Pennsylvania, fields in the early days and like many other veteran oil men worked his way west following the fortunes of various new fields. He resided in Tulsa from 1907 until 1910 and operated in the Mid-Continent as a member of the firm of Argue & Compton. He then went to California. Mrs. Argue and two sons and three daughters survive him.

METCALF SUCCEEDS REED

NEW YORK, Nov. 9.—Appointment of L. G. Metcalf, of the Union Oil Co. of California, Los Angeles, as a member of three general committees of the American Petroleum Institute to succeed Ralph R. Reed, of the same company, resigned, was announced by the Institute. The groups with which Mr. Metcalf will serve are the General Committees on Fire Prevention, Corrosion and Oil Pollution.

JAMES HARDISON, OIL FIELD VETERAN, DIES

James H. Hardison, a pioneer oil producer, died in his home, Montebello, Calif., November 4. Born in Maine in 1841, Mr. Hardison first entered the oil field at Pithole, Pa., at the height of the excitement in 1865 when wells 600 feet deep were producing 1,000 bbls. of oil, selling at $8 a bbl. One year he worked at odd jobs and one year hauled oil from the wells to the shipping point. Although the distance was only 6 miles the pay was $2 a bbl. with 5 to the load. Over 1,000 teams were hauling oil there. In another year the first pipe line was built and hauling oil by horses was abandoned. Mr. Hardison and his brother Harvey then joined Milton and Lyman Stewart as drilling contractors. They operated at East Foxburg, Pioneer, Turkey City, Shamburg, St. Petersburg and other early fields.

Mr. Hardison also operated pole fishing tools. In 1878 he operated a patent spear to loosen casing. In that year he moved to Salina, Kans. for 6 years of farming but finding it unprofitable he returned to the oil producing business in Tionesta, Pa., where with his nephew C. P. Collins, J. R. Leonard and Oliver Proper he drilled several wells.

The Trenton Rock Field being opened, Mr. Hardison moved in 1892 to Geneva, Ind. where he, Mr. Collins and Mr. Leonard formed the Superior Oil Co. which developed extensive properties. Mr. Hardison was also interested in the Hartford and Colonel Drake Oil companies and owned drilling tools with his nephew Archie Hardison. In 1920 Mr. Hardison moved to Montebello.

In 1876 Mr. Hardison married Miss Mary E. Brooking, of Mercer, Pa. She and two children, Mrs. H. O. Butler and Wallace B. Hardison, are living. Mr. Harrison was an intimate friend of many such oil men as J. R. Leonard, Harry Heasley, J. H. Evans, Oliver Proper, Samuel M. "(Golden Rule)" Jones, J. D. Downing, Milton and Lyman Stewart and William Glendenning. He was a member of the Masons and of the Odd Fellows.

TIDAL OIL WILL MOVE TO PHILCADE BUILDING

Waite Phillips of Tulsa has purchased the Tidal Oil Co.'s office building and the lot on which it stands at Cheyenne Avenue and Sixth Street in Tulsa, but has made no announcement as to what use he will make of it. The Tidal Oil Co. will move its headquarters to the Philcade Building, owned by Waite Phillips, and located at Fifth Street and Boston Avenue. The latter building is now nearing completion. The Tidal's present headquarters are somewhat removed from the center of the city's business life and its new location in the Philcade Building will give it a more centralized location.

WESTERN NEW YORK FIELDS

BOLIVAR, N. Y., Nov. 9.—The Messer Oil Corp., one of the largest operators in the Bradford-Allegany Field, has bought control of the Herrick-Messer Oil Corp. by the purchase of John P. Herrick's interests. The properties lie in the Bolivar Field and will be developed next spring.

The search for gas in the deep horizons in western New York had been extended to the neighborhood of Belmont, Allegany County, where a well is being drilled on the Raymond Cline farm at Feathers Creek. It is down 2,000 feet and is destined for the deep Medina sand. A number of deep tests have been drilled in Allegany County with no success thus far save for a wet gas production near Bolivar from an unidentified formation above the Onondaga limestone.

For Rock-Bottom Economy
Specify HOUGH EXTENSION LOWER VALVE

Built without compromise: design is *right*. Fits any make working barrel—oversize Steelex Ball and Seat. No leathers to cut out. Less cut oil and B.S. Any size you need. Consult your best supply store or write direct.

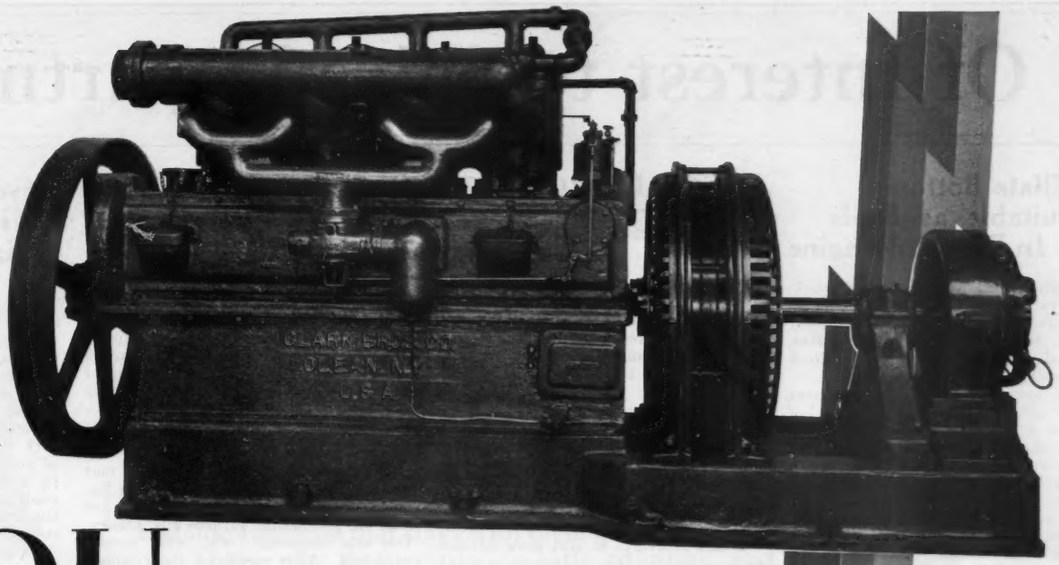
THE CHARLES N. HOUGH MFG. CO.
Franklin, Penna.

C. O. Shumaker, *Sales Representative*
1143 South Xanthus St., Tulsa, Okla.

C. R. Brooks, *Sales Representative*
1632 West Humboldt St., Fort Worth, Texas

Products That Cut Down Your Underground Overhead

An Incombustible Paint
Has been exposed to over 1200 deg. Far. for over two years.
Volco
Holzapfels Heat Proof Protective
Send for Circular to
International Compositions Company, Inc.
25 Broadway, New York



YOU SAY *WHERE!*

You pick the spot where you want electricity—you can have electric power there with the CLARK Generator Unit.

Light, compact, balanced, sturdily designed, and fully enclosed, this unit is easily transported, durable and efficient.

Consists of Generator—75 K.V.A., 480-V., 3-phase, 60-cycle, 400 R.P.M., direct connected to CLARK 4-cylinder gas or gasoline Engine of 90 H.P. at 400 R.P.M., arranged with a direct connected exciter. Floor space 11½ ft. by 53 in.; height 78 in.; weight 15000 lbs.

Compressors and Gas Engines

CLARK BROS. COMPANY
OLEAN, N. Y.

Export Office: 150 Broadway, New York City

Warehouses:
Tulsa, Okla., McCamey and Sweetwater, Texas; Artesia, N.M.

California:
Smith, Booth, Usher Company
228 S. Central Ave., Los Angeles

Mid-Continent Sales Offices:
Tulsa and Fort Worth

CLARK

Of Interest to Sales Departments

Distillate Bottoms Suitable as Fuels In Rail-Car Engine

Pressure distillate bottoms from cracking operations at refineries is proving to be a satisfactory motor fuel for rail-car engines, according to E. Wanamaker, electrical engineer of the Chicago, Rock Island and Pacific Railroad.

In an article appearing in the current issue of the Journal of the Society of Automotive Engineers Mr. Wanamaker explains the rapid development of rail-car engines to supplement steam power in railroad transportation. Citing the experience of the Rock Island railroad he points out that improvement in the design of internal combustion engines has made it possible for railroad operators to use low priced distillates as motor fuels instead of gasoline and other higher priced fuels and this has added to the economy of the operation.

In regard to desirable specifications for these distillate motor fuels Mr. Wanamaker gives the following requirements:

1. The distillate shall be free from water or suspended matter.
2. The doctor test shall be negative.
3. The viscosity shall not be higher than 34 seconds, Saybolt universal scale, at 100 degrees Fahrenheit.
4. Distillation range:

Evaporated Per Cent	Distillate
5	375
20	425
50	450
90	550
Endpoint	600

5. At least 95 per cent shall be recovered after distillation.
6. The residue left in the flask after distillation shall not exceed 1½ per cent, and shall not show an acid reaction.
7. The sulphur content shall not be over 0.3 per cent.

Sources of Supply

In regard to the sources of supply for these distillates Mr. Wanamaker said:

"Pressure distillate bottoms from different refineries vary somewhat in volatility. It contains all of those fractions of the pressure benzine that have boiling points higher than the endpoint of gasoline, and usually contains also a small percentage of the heavier end of the gasoline. The endpoint of pressure distillate bottoms is from 550 to 700 degrees Fahrenheit, depending on the method used to produce the pressure benzine. That with an endpoint of 600 degrees Fahrenheit or less can be used as fuel in specially de-

(Continued on Page 158)

REJECTIONS IN NORTH DAKOTA

A total of 140 cars of gasoline have been rejected by state inspectors in North Dakota so far this year due to the fact that the gasoline failed to meet the specifications established by state law. The state specifications in general are the same as those adopted by the Federal Government in its purchases.

The state department in charge of inspections has arrangements with the large shippers to test the gasoline before shipment is made from the refinery. By this method the routine testing has been simplified. The gasoline is tested in storage at point of shipment and then a few cars are later tested after they arrive in the state.

The state department reports that there has been a large increase in the tractor consumption of gasoline. This gasoline is exempted from the state gasoline tax so there is now very little difference between the price of the two motor fuels for use by farmers. It is estimated that 90 per cent of the motor fuel used on North Dakota farms is gasoline.

SPECIAL PRODUCTS OF REFINERY OPERATION GAIN IN IMPORTANCE

By Charles E. Kern
Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., Nov. 11.—A beginning is being made in several departments of the government to trace all products of petroleum to their finished state in which they reach the ultimate consumer.

It has been difficult to even assemble the names of these products of petroleum at the time they are consumed except in cases of well known lubricants and fuels. New uses for products of petroleum are being developed but no one has successfully assembled data relating to them.

It has proven to be still more difficult to even approximate quantities of many of these products in the form in which they reach the ultimate consumer. Not only will an attempt be made to trace such products as are now manufactured and consumed, but also to forecast probable use of petroleum in forms that are now being devised by laboratory experiments.

Fatty acids are regarded as likely and are coming into use in manufacturing substitutes for butter and lard, soaps and kindred products. Aromatic hydrocarbons have been used to furnish artificial leather and are regarded as a likely source of other products, some of which are being placed on the market today. Picric acid, dye stuffs, numerous drugs, explosives, perfumes, antiseptics, saccharin, and xylol are among these products. Artificial rubber tires, waterproof clothing, electrical insulation, and cements are also included in the list. Petroleum is largely used as a substitute for linseed oil and in the manufacture of varnish. At the present state of the art some of these products are possible but not capable of being manufactured in commercial quantities.

The monthly refinery statistics issued by the United States Bureau of Mines has long included under a single head, "all other refined products," including everything not assembled under designations of principal products. However, in the early part of 1929 the Bureau of Mines undertook to obtain a detailed statement concerning "all other finished products for the year 1928." This throws considerable light on this subject and at some time in the future the information will be given a permanent place in official records.

Road Oil Important

The more important products that make up the subdivision of "all other finished products for the year 1928" are road oil, petrolatum, furnace oils, absorption oils, medicinal oils, and special naphthas. After specifying these minor products there are numerous others that appear in the reports of oil companies of such slight quantities that they are still carried under the head of "miscellaneous" which consists of candy maker's oil, transformer oil, cosmetic oil, acid oil, oil soluble sodium sulphonate, ink oil, insulating flux, cable coating, sealing compound, pitch, compounding oils, mineral seal oil, signal oil, and insecticides.

As was expected, this survey of "all other finished products" for the year 1928 showed that road oils comprised the major portion of this class. The production of road oils in 1928 amounted to 4,964,000 bbls., or approximately 850,000 short tons. The latest comparable survey, made for the year 1922, showed a road oil production at refineries of 2,739,000 bbls. This would indicate a very material growth in output of this commodity.

The production of petrolatum in 1928 was 312,000 bbls. as compared with 311,000 bbls. in 1922. The 1928 output of cleaner's and painter's naphthas as reported in this canvass was 79,000 bbls. However, it is probable that the actual production was considerably in excess of this figure since most companies class all their naphtha with gasoline. The same would apply to furnace oils used in domestic heating which class of oil is ordinarily reported as fuel oil.

The following table gives the quantities of these minor products:

DETAIL OF PRODUCTION OF "ALL OTHER FINISHED PRODUCTS, 1928"

(Thousands of barrels of 42 U. S. gallons.)

	East Coast	Appalachian	Ind., Ill., Kans., etc.	Okla., Kans., Mo.	Texas	Louisiana-Ark.	Rocky Mountain	California	Total	Texas Gulf Coast	Louisiana Gulf Coast
Road oils	1,116	19	1,644	297	3	623	41	1,221	4,964	..	549
Petrolatum	30	222	49	3	8	..	..	..	312	7	..
Furnace oils	..	9	141	123	..	13	26	..	312	..	13
Absorption oils	..	..	..	81	36	..	..	152	269	..	..
Medicinal oils	27	..	32	..	..	..	..	28	87	..	..
Special naphtha	..	32	4	53	3	..	5	14	79	..	..
Miscellaneous	143	180	327	18	13	1,587	88	1,023	3,379	12	1,516
Total	1,316	430	2,197	575	63	2,223	160	2,438	9,402	19	2,078

CONTINENTAL CONDUCTS SCHOOL

PONCA CITY, Okla., Nov. 9.—Approximately 150 salesmen of the Continental Oil Co. attended a sales school held here this week. The purpose of the school was to acquaint the salesmen with the specifications of the new lubricating oils which the company recently placed on the market. B. E. Sibley of Denver, Colo., chief lubrication technologist of the company, and J. E. Moorehead, in charge of sales promotion, were in attendance at the meetings.

OPPOSES HIGHER TAX

Governor C. C. Young of California has announced that he will oppose an increase in the present gasoline tax of 3 cents. There has been considerable agitation in the state to increase the tax in line with the action of several other states where taxes as high as 6 cents are collected.

According to Governor Young the present tax yields sufficient revenue to carry on the state's road building program and there is therefore no necessity of increasing the tax rate.

Government to Study Uses of Asphalt in Highway Improvement

By Charles E. Kern
Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., Nov. 11.—A detailed study of low cost methods of oil treating hundreds of thousands of miles of gravel, sand, clay and top soil highways in this country will be made by the Bureau of Public Roads, Department of Agriculture.

H. S. Fairbank, engineer of the bureau of public roads recently stated that traffic on hundreds of thousands of miles of roads require a smooth dustless surface but it is not sufficient for cementing or the use of costly hard surfacing.

"A joint technical committee created in March and representing the asphalt industry and the bureau of public roads," says Mr. Fairbank, "proposes to make a detailed study of the results of the methods of bituminous treatment developed in many parts of the country, to study the efficacy of the methods of applying and mixing asphalt and aggregates, to analyze the asphaltic materials actually used in work done to date and all available materials which might be used, and to build and study experimental roads of various types. Some of this work has been under way for some time.

"A detailed analysis of the methods, materials, cost, and service of the various types of low cost surfaces thus far developed in various localities will be made. Among the types to be studied are the sand-clay and topsoil surface treatments in the southeastern states; sand-asphalt surfaces in Massachusetts, North Carolina, and other states; bituminous treatments of clay roads in Illinois and elsewhere; the retread method of Indiana and

(Continued on Page 158)

Venezuela Gasoline In Eastern Markets Increases Rapidly

NEW YORK, Nov. 9.—With gasoline consumption in the East Coast area for 1929 expected to show between 15 and 20 per cent increase over totals for 1928, data on receipts of California and foreign gasolines at principal East Coast markets indicate that sales of so-called "outside" gasolines are cutting heavily into sales totals of eastern-made motor fuel.

California, of course, has continued the principal source of this outside motor fuel for eastern consumption, but Venezuela is becoming increasingly important in this respect, current import statistics indicate. Total receipts of outside gasoline for the first nine months of 1929 have shown an average of 67 per cent, or at the rate of more than four times the maximum anticipated increase in consumption. Imported gasoline has shown the greatest percentage increase, and it is expected that imports of motor fuel from Venezuela and the Dutch West Indies will show further material gains.

Receipts of California gasoline at East Coast markets for September and the first nine months of the year, with comparable data for 1928, are given by the Department of Commerce as follows:

	Gallons	
	1929	1928
September	86,100,000	54,298,000
First nine months	717,434,000	504,126,000

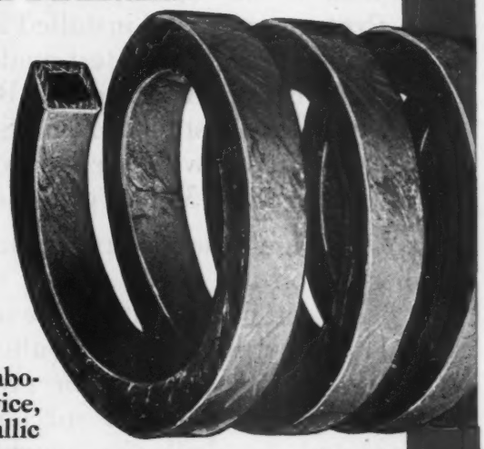
September receipts show an increase of 58 per cent over those for the same month last year, while receipts for the nine months ended September 30, last,

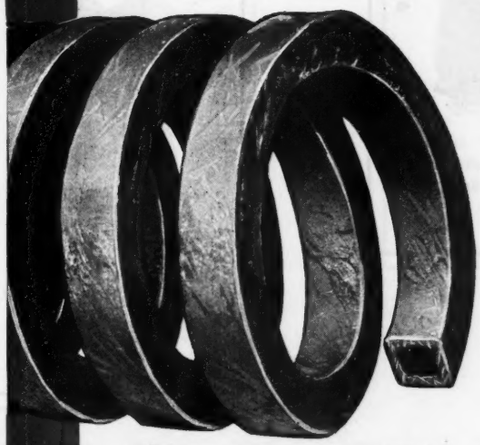
(Continued on Page 158)

THIS PACKING STAYS YOUNG

THERE'S a springiness to the New Elastic Core Durametallic Packings that stays with them and keeps them young. That's why they require so little adjusting, and yet are so easy on your rods and shafts.

They retain every advantage of the regular Durametallic Packings — antifrictional metals, self lubrication, extra long life, etc., and they add the big feature of permanent resiliency which results in improved sealing efficiency and greater protection than you have ever known against abrasive damage to rods, shafts, and stems.





DURAMETALLIC ELASTIC CORE PACKING

Thoroughly tested in laboratory and in actual service, this Improved Durametallic is meeting with rapid acceptance in the oil industry where good packings are of vital importance to operating efficiency.

There's a grade and type of Improved Durametallic for every petroleum need. Write for new bulletin on Durametallic Elastic Core Packings.

DURAMETALLIC CORPORATION

Kalamazoo - - - - - Michigan

BRANCH OFFICES

DURAMETALLIC PACKING CO., 405 Equity Bldg., Oklahoma City, Okla.
DURAMETALLIC CORPORATION, 35 E. Wacker Drive, Chicago, Ill.
UNIVERSAL PACKING CORP., 108 Smithfield St., Pittsburgh, Pa.
DURAMETALLIC CORPORATION, 511 W. Washington Blvd., Los Angeles, Cal.
PACIFIC COAST RUBBER CO., 51 Main St., San Francisco, Cal.
S. MacDONALD CO., 452 Lexington Ave., New York, N. Y.
UHRICH SUPPLY CO., 914 Central St., Kansas City, Mo.

So easy for Ins

Bettis Protectors can be quickly installed on your derrick floor, the only equipment required being a special expansion tool.

Some idea of the rapidity with which these Protectors can be installed is indicated by the results of a test made recently at Ventura. A total of 110 Bettis Protectors were installed on 5395 feet of pipe in exactly two hours forty-five minutes, averaging 33 feet per minute.

When installing, each Bettis Protector is smeared on the inside with a thick soap paste, although light engine oil or rotary mud can be used as an alternative. The Protector is then pushed through the cone into the special expander, and the drill pipe fourble is then slowly lowered, the pin of the tool joint coming down into the cone. Weight of the drill pipe forces the cone through the expander and pushes the Protector over the tool joint onto the drill pipe.

If the Protector is to be slid up to the collar the drill pipe is lowered full length into the expander so that there will be room enough for the tongs between the tool joint and Protector.

To slide the Protector up to any desired position on the pipe, the tongs are used, resting on the rotary table.

Installations are made in two runs on fourbles and three runs on tribles.

Bettis Protector on cone ready to lower drill pipe to slip rubber over tool joint.

Drill pipe being lowered to push up Protector.

Grip the Pipe Tightly

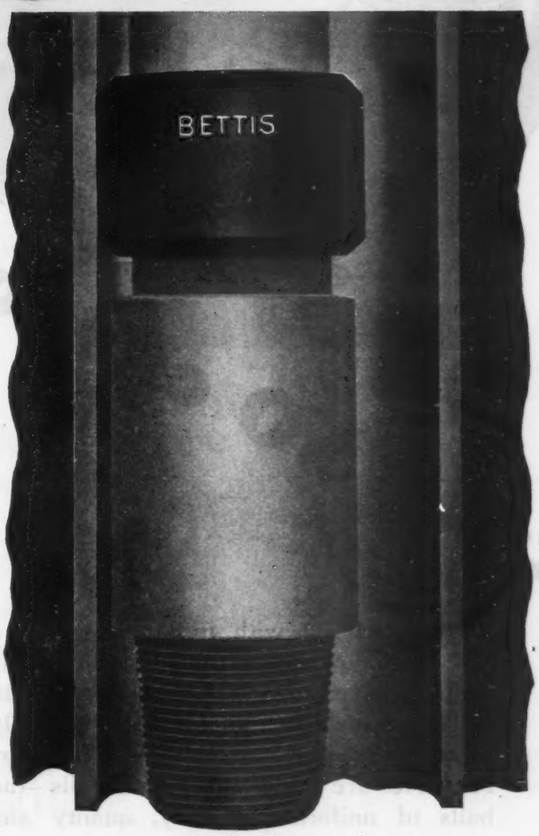
The character of Bettis Rubber makes unnecessary the use of locking devices. No metal is added because none is needed. The Rubber itself is the strongest and most permanent locking feature. The extreme toughness and snap in the rubber assure permanent adherence to the pipe for its entire life, but as an added assurance of gripping, vacuum cups are molded into the inner periphery of the Protectors. The tight grip that Bettis Protectors maintain is better comprehended by observing their elastic stretch on a given size. For instance a 6″ Protector is only 4¼″ inside diameter before expanding and is expanded to operate on a drill pipe having diameter of 6⅝″. A demonstration sample of the actual rubber will be forwarded upon request.

Bettis Protectors

your Crew to s tall

Drill pipe being removed from expansion tool with Protector on.

Running in drill pipe, with Protector in place, near collar.



Fully Patented

Perfect Pipe Protection

The drill pipe can never contact the casing; nor can the tool joints or collars. The original tool marks on the tool joints will remain. Bettis Protectors prevent premature fatigue of drill pipe; minimize vibration; reduce the number of twistoffs and fishing jobs; assure faster drilling; reduce the "wear and tear" of all drilling equipment; drill straighter hole by serving as guides for the pipe; make possible the drilling of extra deep wells.

Ask for new Catalog.

"Best bet yet!"

Patterson-Ballagh Corp.

Insurance Exchange Building, Los Angeles, Calif.

Texas and Gulf Coast Distributors:
Bettis Sales Co., 616 Public National Bank Bldg., Houston

Oklahoma Distributors:
Bailey & Becker Company, 2416 No. Boston Place, Tulsa

New York Office: 39 Cortlandt St.

Carried in stock at Los Angeles, Santa Fe Springs, Ventura, Kettleman Hills, Bakersfield, Coalinga, Long Beach, Tulsa, Houston, Wink, Texas; Calgary, Alberta, Canada; New York City.

take NO chances

COMPARED with the expenses of a single production interruption, the slight difference in cost between Strom Balls and ordinary balls appears absurdly trivial. Make sure that your working barrel valves are fitted with Strom Balls—the balls of uniform accuracy, quality and strength.

All Strom Balls give uniformly satisfactory service. They possess **Quality - Strength - Accuracy - Finish - Hardness**—all of which means durability and resistance to wear.

Remember also that Strom Balls are furnished in **Stainless Steel - Brass and Bronze**—as well as the regular high **Chrome Mo-lyb-den-um Steel.**

Strom Steel Ball Co.

The largest independent and exclusive steel ball manufacturer.

360 No. Michigan Ave. Chicago, U.S.A.

Pacific Coast Office
309 Pacific Mutual Bank Bldg., Los Angeles, Calif.
Philadelphia Office
Packard Building

DISTILLATE BOTTOMS SUITABLE AS FUELS

(Continued from Page 154)

signed engines for rail-cars. If the end-point is higher, it is necessary to rerun the bottoms to remove the heavy end and produce a good engine fuel. All of this material that will boil off at 600 degrees Fahrenheit, is now generally known as distillate.

"This distillate, made from pressure distillate bottoms, is rapidly coming into general use as a fuel for engines in railroad equipment. Its physical properties are similar to those of kerosene, but its chemical structure is different because of the inclusion in the distillate of a high percentage of unsaturated hydrocarbons, which make it an unsatisfactory substitute for kerosene for most purposes. However, the unsaturates are an important factor in making distillate a suitable fuel for properly designed rail-car engines, as they prevent the knocking that is common in kerosene burning engines.

"This is a technical reason for developing rail-car engines that will use distillate as fuel. The commercial reason is the vast available supply of such a low priced fuel. A survey of the refineries in any oil producing district shows a large capacity in low pressure cracking plants. Nine per cent of the rated capacity of these plants may be taken as representing the potential supply of distillate from a given district. The distillate is actually made every day, although it is often run off to the most convenient outlet usually into steam fuel oil, because of its poor market."

STUDY USES OF ASPHALT IN ROAD IMPROVEMENT

(Continued from Page 154)

somewhat similar treatment of stone roads in other states; the so-called blotter treatment of gravel roads in Minnesota and adjacent states; oiled sand roads in California, Nebraska, Nevada, and elsewhere; and in the mixed-in-place treatment of fine crushed rock and gravel surfaces, which has reached its highest development in the western states.

"Studies have already been made of surfacing treatments of sand-clay and topsoil in Florida and South Carolina, and also of oil treatments of clay roads in Illinois and of the retreated method in Indiana. The data gathered by engineers of the bureau, the asphalt industry, and the respective states, are being analyzed and reports on the three types will be published shortly.

"Studies of the efficiency of construction methods and equipment are being conducted by the bureau with the advice and assistance of the asphalt industry. These studies are similar to those previously made by the bureau in grading and concrete and bituminous pavement construction.

"The study and analysis of the available bituminous materials is the particular responsibility of the industry, under the plan of co-operation that has been agreed upon.

"The construction and study of experimental roads has been started and will be actively prosecuted, mainly by the bureau of public roads, in co-operation with several of the state highway departments, but always with the active assistance and advice of representatives of the asphalt industry.

"Three experiments are now in progress. One is the continuation of surface treatments of topsoil in South Carolina; another is a series of experiments in California involving the treatment of fine crushed rock and gravel surfaces with several types of bituminous materials by surface treatment and mixing-in-place; the third is a series of experiments in the treatment of sandy soil in the sandhill section of Nebraska with various asphaltic materials.

"There is today a need for low cost methods of improving hundreds of thousands of miles of highways in the country, consisting of gravel, sand-clay, and topsoil and graded and drained earth roads. The traffic on these roads is such as to require a smooth, dustless year-round surface, but not great enough to justify the costlier high type surfaces.

"About six years ago the bureau first became interested in the development of low cost surfacings, using bituminous materials to lay the dust and reduce the loss of surfacing material. At that time, increase in traffic on the forest roads, which had been constructed under supervision of the bureau, gave rise to a dust nuisance and loss of surfacing material. The forest roads had a surfacing of finely crushed rock or gravel, which had been adequate for traffic up to that time. A similar type of surface has been adopted by a number of the western states and a rather considerable mileage had been built.

"Oregon and California took the lead in the experimental use of petroleum oils by various methods. Later the bureau joined with the California highway department in an investigation of the various methods that had been tried with a view to ascertaining what methods or combination of methods and materials would afford the greatest relief. At about the same time the bureau was co-operating with the highway commission of South Carolina in similar experiments of topsoil roads."

VENEZUELA GASOLINE IN EASTERN MARKETS

(Continued from Page 154)

show a gain of 42 per cent over those during the first nine months last year.

Gasoline imports for September and the first nine months of 1929, with comparison for the corresponding periods in 1928, are given by the same authority as follows:

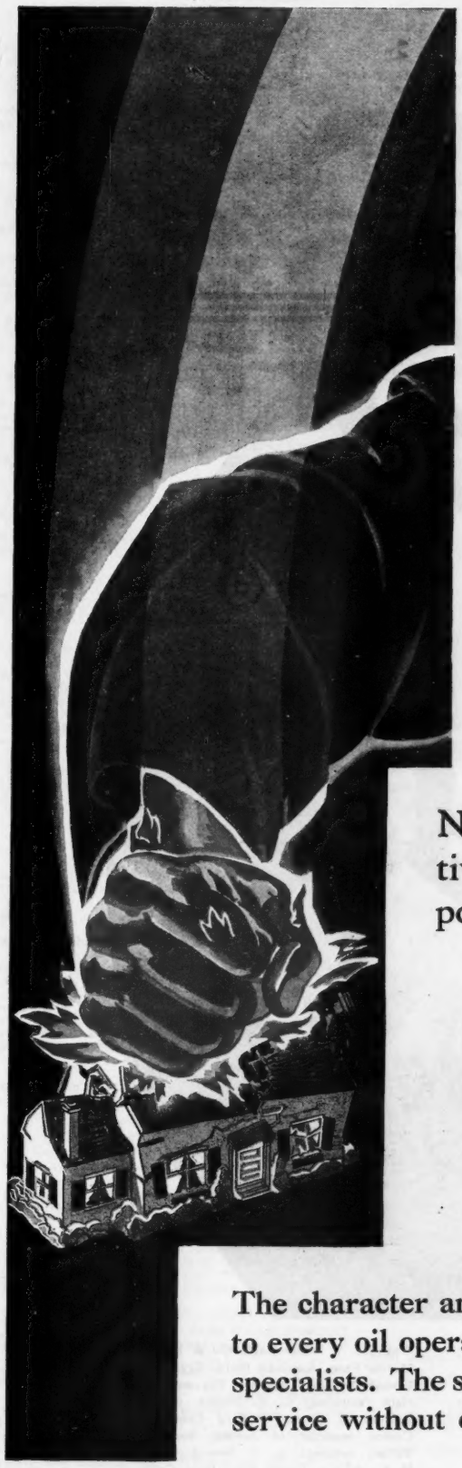
	Gallons	
	1929	1928
September	37,842,000	8,106,000
First nine months ..	357,964,000	133,812,000

September gasoline imports were more than three and one-half times those for September last year, while imports during the first nine months of the current year were 92 per cent ahead of those for the corresponding months of 1928.

Shell and Pan American

The entry of Shell into East Coast marketing areas this year, it was realized, would be accompanied by a heavy flow of gasoline from the Royal Dutch-Shell refineries at Curacao and other points in the Dutch West Indies group to take care of the motor fuel requirements of Shell Eastern, the marketing subsidiary operating in this area. Because of the importance of Shell in the world petroleum picture, however, and the known aggressiveness of the company in its marketing operations, it became evident at the outset that Shell was to be the "dark horse" in the eastern marketing field. Although Shell has been operating in the East for close to a year now, and has established wide distribution for its products, it still remains in the "dark horse" class and its operations are being watched with great interest.

The imported gasoline situation has been complicated by the completion of Pan American's new 125,000-bbl. refinery located at Aruba, Dutch West Indies. In close proximity to the Venezuelan oil fields, in which its producing subsidiary, Lago Oil & Transport, has sufficient crude production to run the refinery close to capacity, Pan American is in an advantageous position from a competitive standpoint in the East. The company had long been an outstanding factor in fuel oil markets in the East, and had considerable gasoline business already established. Thus, the company was in position to take in hand the disposal of the gasoline output of its Aruba plant, and recent sharp increases in imports of gasoline indicate that the Aruba refinery is now a heavy shipper to eastern seaboard markets. Within the next several months, with the new refinery settled down smoothly into its operating schedule, it is expected that further sharp increases in gasoline receipts from Aruba will be witnessed.



When FIRE *strikes--*

it is too late to think about fire insurance, — your policy stands as written.

Now *before* fire strikes, is the time for every executive in the oil industry to check up his insurance policies—

- √ Amount of Insurance
- √ Co-insurance Requirements
- √ Locations of Properties
- √ Description of Items Insured
- √ Interests of Others
- √ Renewal Dates

The character and amount of insurance necessary for complete protection to every oil operator or executive can be determined only by insurance specialists. The staff of The Frates Company will be glad to give you this service without obligation.

The Frates Company

An Insurance Service Organization

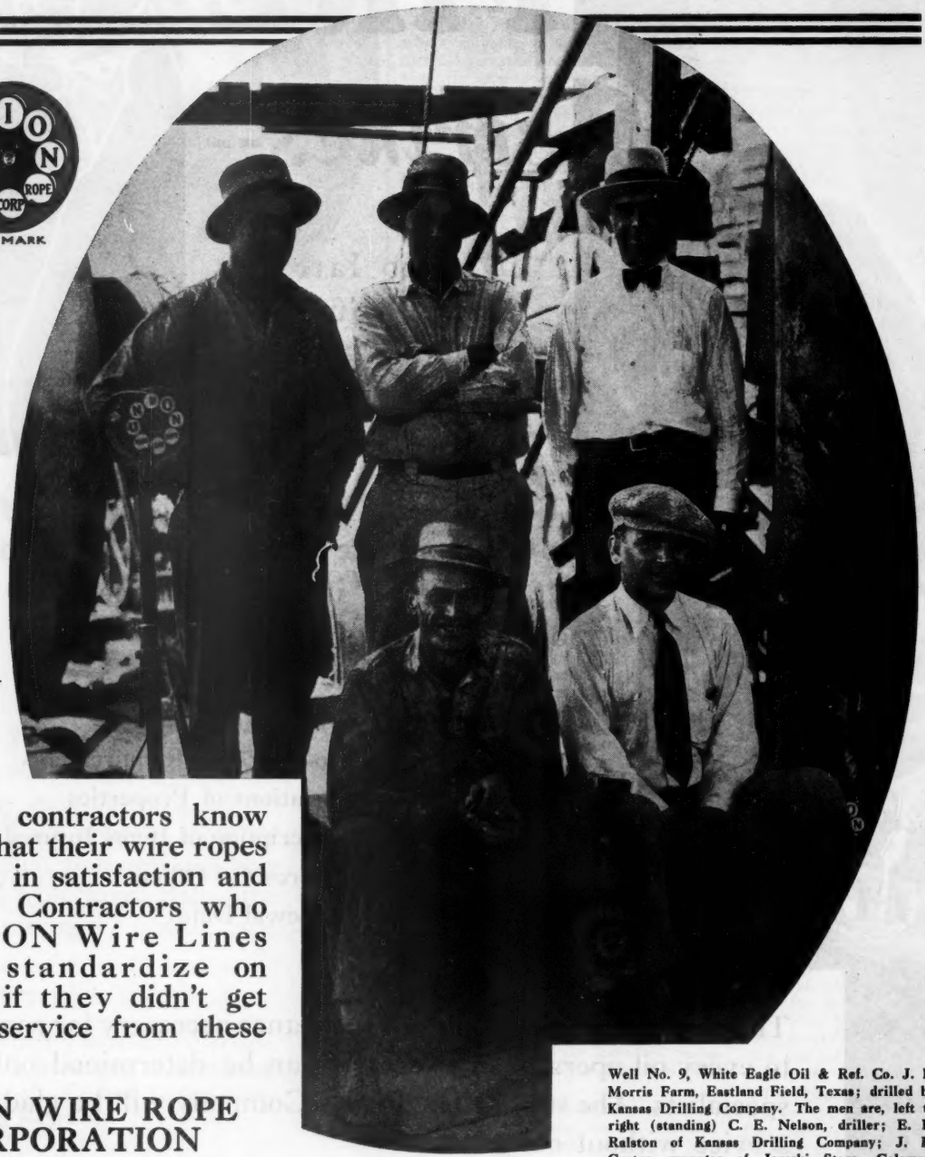
THIRD FLOOR
THE PHILTOWER

TULSA, OKLAHOMA

PHONE: 2-6116
L. D. 309

CONTRACTORS.....
KNOW THE ROPES

UNION WIRE ROPE CORP
TRADE MARK



Drilling contractors know exactly what their wire ropes give them in satisfaction and economy. Contractors who try UNION Wire Lines wouldn't standardize on UNION if they didn't get superior service from these lines.

Well No. 9, White Eagle Oil & Ref. Co. J. P. Morris Farm, Eastland Field, Texas; drilled by Kansas Drilling Company. The men are, left to right (standing) C. E. Nelson, driller; E. L. Ralston of Kansas Drilling Company; J. R. Custer, manager of Jarecki Store, Coleman, Texas; (sitting) L. J. Norris, tool dresser; H. G. Alston, Union Wire Rope Corp.

UNION WIRE ROPE CORPORATION

3 North Madison Ave., Tulsa, Okla.

Oil Country Sales Offices 338 Kennedy Bldg., Tulsa

Branch Offices and Warehouse Portland, Oregon

Factory 21st and Manchester, Kansas City

JARECKI MANUFACTURING COMPANY
Oil Country Distributors—Stocks at All Stores

UNION WIRE LINES

WILDCAT OPERATIONS IN OKLAHOMA

(Descriptions are East and North unless otherwise marked)

(Continued from Page 50)

HUGHES COUNTY

Wright et al's No. 1 Ott, SE SW Sec. 15-5-11 .....Rig.
Canady et al's No. 1 Kanard, NW SW Sec. 29-9-12 ....Drlg. 1,275 ft.
Irwin et al's No. 1 Jones, SE NW Sec. 30-5-10 .....Rig on ground.
McCullough Oil Co.'s No. 1 Scott, NW NE Sec. 23-6-8 ....Drlg. 3,735 ft.

JACKSON COUNTY

Altus Oil Co.'s No. 1 Northington, NE cor. NE Sec. 4-1-20w .....Shut down 2,020 ft.

KINGFISHER COUNTY

Superior Oil Co.'s No. 1 Story, SE cor. Sec. 25-19-5w ....Fishing 6,285 ft.
Galt Brown's No. 1 Wolf, NW SE Sec. 6-16-7w .....Shut down 6,015 ft.

KIOWA COUNTY

Hyde et al's No. 1 Jones, SE cor. Sec. 23-3-18w-50 .....Shut down 490 ft.
Merrick Oil Co.'s No. 1 Kelly, NW cor. SE Sec. 20-7-17w ..Shut down 1,035 ft.

LEFLORE COUNTY

Red Bank Oil Co.'s No. 1 fee, SE SW NW Sec. 23-9-24 ..Drlg. 5,200 ft.

LATTIMER COUNTY

Limestone O. & G. Co.'s No. 1 Shaw, NW cor. NE NW Sec. 23-5-18e .....Shut down 1,450 ft.
Limestone Oil & Gas Co.'s No. 1 McMurray, SW cor. SW Sec. 15-5-18 .....Fishing 4,020 ft.

LINCOLN COUNTY

Morgan & Flynn's No. 1 Johnson, SW NE Sec. 1-16-5 ....Drlg. 1,795 ft.
Phillips Pet. Co.'s No. 1 Stephens, SE cor. NW Sec. 29-12-3 .....Drlg. 4,890 ft.

LOGAN COUNTY

Haley & Smith's No. 1 Guier, SE cor. SW Sec. 33-18-3w ..Shut down 3,970 ft.

McINTOSH COUNTY

Jennings Bros.' No. 1 Crabtree, NW SW NE Sec. 31-10-14 .....Drlg. 900 ft.
Spring Valley Oil Co.'s No. 1 Carr, SE cor. NE NW Sec. 16-10-13e .....Shut down 2,508 ft.
Patterson and others' No. 1 Smith, SW cor. NW SE Sec. 32-9-16 .....Shot 240 qts. 5,446-5,559 ft.; shot went off up hole; fishing

MAJOR COUNTY

Earl and others' No. 1 Turner, C NE NE Sec. 23-20-14w..Rig.

MUSKOGEE COUNTY

Sioux Oil Co.'s No. 1 Unknown, NW SE Sec. 21-11-19 ....Shut down 1,011 ft.
Cooper-Badget's No. 1 Young, NW NE NE Sec. 7-12-20e..Shut down 50 ft.

NOBLE COUNTY

Peerless et al's No. 1 Wentz, NW SW Sec. 22-22-1 ....Drlg. 1,990 ft.
Gypsy Oil Co.'s No. 1 Bailey, C NE NE Sec. 24-22-1e ..Drlg. 5,242 ft.; water.
Magnolia Petroleum's No. 1 King, C SE SW Sec. 26-20-1w.Wilcox 5,375-5,410 ft.; hole full water; abandoned.

OSAGE COUNTY

Lewis Prod. Co.'s No. 1, NW cor. Sec. 23-26-7 .....Spudding.

OKFUSKEE COUNTY

Henry Oil Co.'s No. 1 Harjo, Sec. 36-12-9 .....Drlg. 2,720 ft.
Prairie's No. 1 Smith, SW NW Sec. 15-12-10 .....Drlg. 3,814 ft.
E. L. Robinson's No. 1 Rice, NW Sec. 2-10-9 .....Location.
Shepard et al's No. 1 Neveas, SE NW SW Sec. 3-12-10 ..Drlg. 3,468 ft.
Superior and others' No. 1 Carolina, SE cor. Sec. 6-11-7e .....Abandoned 4,840-4,910 ft.; water.

OKLAHOMA COUNTY

Ryan & Martin's No. 1 Lawton, NE NW Sec. 3-11-2w ..Rig.
Tom Slick Oil Co.'s No. 1 Martin, C NW NW Sec. 13-13-1w .....Drlg. 5,697 ft.
Hall & Briscoe's No. 1 Holmes, NE cor. SW SE Sec. 10-11-3w .....Shut down 4,750 ft.

PITTSBURG COUNTY

Mid-Western Oil Co.'s No. 1 Unknown, SE SW NE Sec. 11-7-18 .....Machine.
Galbreath's No. 1 Snyder, C W half SW Sec. 28-4-13 ....Shut down 100 ft.
Empire O. & R. Co.'s No. 1 Williams, C NE SE Sec. 33-7-16e .....Pulling 10-in. csg. 3,100 ft.
Kerr & Koy's No. 1 Hall, C NW NW Sec. 32-4-12 .....Drlg. 3,000 ft.

PONTOTOC COUNTY

Indian Territory Illuminating Oil Co.'s No. 1 McFarland, NW cor. Sec. 4-5-5 .....Drlg. 2,910 ft.
Independent and Shaffer's No. 1 Moses, NE SE SW Sec. 10-5-4 .....Drlg. 3,292 ft.

POTTAWATOMIE COUNTY

Payne Drlg. Co.'s No. 1 Bullock, SE NE Sec. 22-6-3 ....Rig on ground.
Lippa Drlg. Co.'s No. 1 Pittman, SW NW Sec. 3-8-4 ....Drlg. 3,790 ft.
Twin State's No. 1 Ray, NW SW Sec. 3-8-4 .....Drlg. 2,010 ft.
Prairie O. & G. Co.'s No. 1 Bodkin, SW cor. Sec. 26-8-4 ..Drlg. 3,520 ft.
Empire O. & R. Co.'s No. 1 McKown, SW NW Sec. 25-8-4 .....Drlg. 4,458 ft.
Keister & Manning's No. 1 Tibbs, NE SW Sec. 9-8-4 ....Fishing 4,240 ft.
Amerada's No. 1 Vineyard, NW NE NE Sec. 15-7-3 ....Shut down 5,041 ft.; hole full water 5,093 ft.; pulled back to 4,830 ft.
Gypsy Oil Co.'s No. 1 Randolph, NW NE Sec. 23-6-4 ....Drlg. 3,914 ft.
Cal-Cul Oil Co.'s No. 1 McKnight, NW cor. NE NW Sec. 9-8-3 .....Wilcox 5,485-90 ft.; abandoned.

ROGER MILLS COUNTY

Bucy & Stone's No. 1 Williams, C SW Sec. 23-12-24w ..Rig.
L. C. Hivick's No. 1 Davis, C NW NE Sec. 4-11-26w ....Shut down 1,800 ft.

SEMINOLE COUNTY

Prairie O. & G. Co.'s No. 1 Harjo, NE SW NE Sec. 25-6-7 .....Rig.
Sunray Oil Co.'s No. 1 Sunday, NW SE Sec. 25-5-5 ....Location.
Prairie & Slick's No. 1 Bettsey, NW SW Sec. 36-6-6 ....Drlg. 4,040 ft.
Harris' No. 1 Harjoche, SE NE SE Sec. 8-6-6 .....Wilcox 4,047-52 ft.; hole full water.
Prairie's No. 1 Mingo, NW NE Sec. 25-6-6 .....Abandoned 2,958 ft.

SEQUOYAH COUNTY

Hunt and others' No. 1 Unknown, SE cor. NW SW Sec. 12-12-22 .....Shut down 1,260 ft.
Buffington and others' No. 1 Melcher, C SW NW Sec. 31-12-24 .....Shut down 3,000 ft.

WOODS COUNTY

Peerless O. & G. Co.'s No. 1 Unknown, C NW NE Sec. 28-28-16w .....Drlg. 200 ft.
S. K. Miller's No. 1 Copenhavers, NW cor. NW Sec. 18-24-13w .....Rigged up and shut down.
Gypsy-Prairie and others' No. 1 Thompson, SE cor. SW Sec. 10-25-15w .....Drlg. 5,955 ft.
Sinclair Oil & Gas Co.'s No. 1 Showalter, C SW SW Sec. 33-27-16w .....Fishing 5,349 ft.

WOODWARD COUNTY

Farrond et al's No. 1 Unknown, SE cor. SW SE Sec. 2-23-17w .....Shut down 1,387 ft.
Prairie Oil & Gas and others' No. 1 Wilber, NE cor. NW Sec. 23-23-17w .....Drlg. 5,710 ft.
Billy's Oil Co.'s No. 1 Watt, C SE Sec. 9-23-20w .....Drlg. 4,665 ft.
Burgoyne Brothers' No. 1 Merkins, SW cor. SE NE Sec. 15-21-19w .....Shut down 1,910 ft.

SOUTHERN OKLAHOMA

BRYAN COUNTY

Beckshire et al's No. 1 Guinn, NW cor. Sec. 8-8s-10 ....Rig.
Marshall's No. 2 fee, C SW SE NW Sec. 26-5s-7 .....6-in. csg. 265 ft.
Yale Oil Syndicate's No. 1 Craige, C NW NE Sec. 36-9s-9e .....Drlg. 1,850 ft.

CARTER COUNTY

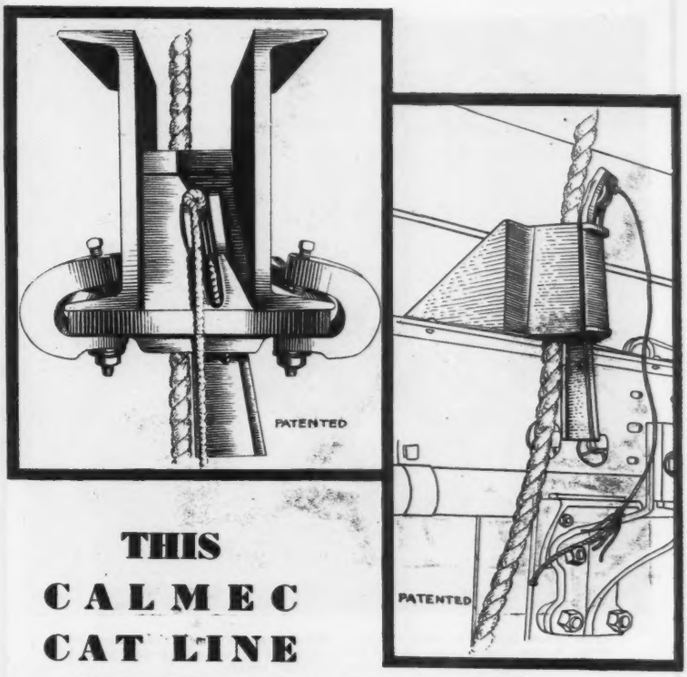
Avon-Dickey's No. 1 Anderson, NE cor. SE NE SE Sec. 32-4s-2 .....Drlg. 890 ft.

CHOCTAW COUNTY

Choctaw Petroleum Co.'s No. 1 Wilson, SW cor. SW Sec. 15-6-19e .....Shut down 1,346 ft.

COTTON COUNTY

Wirt Franklin's No. 1 Bandy, NW cor. Sec. 4-4s-10w ....Drlg. 2,441 ft.



THIS CALMEC CAT LINE GRIP SAVES NINE LIVES BEFORE IT STARTS TO WORK.

It's a money saver for the oil field operator. It saves time.... cuts out line snubbing when the engine is needed for other purposes. It saves labor... relieves the operator from holding the cat line on the cathead. It saves cat lines... does away with burning up the cat line on the cathead. It's a husky steel block which allows the cat line to pass through a tapered aperture until the grip is pulled into position. It's made in two styles.... one for placing between the headers and one to go above the header. We'll be happy to send you descriptive literature, weights and prices if you'll send in the coupon.

CALIFORNIA MANUFACTURING AND ENGINEERING COMPANY

5333 So. Riverside Dr. Los Angeles, Calif.

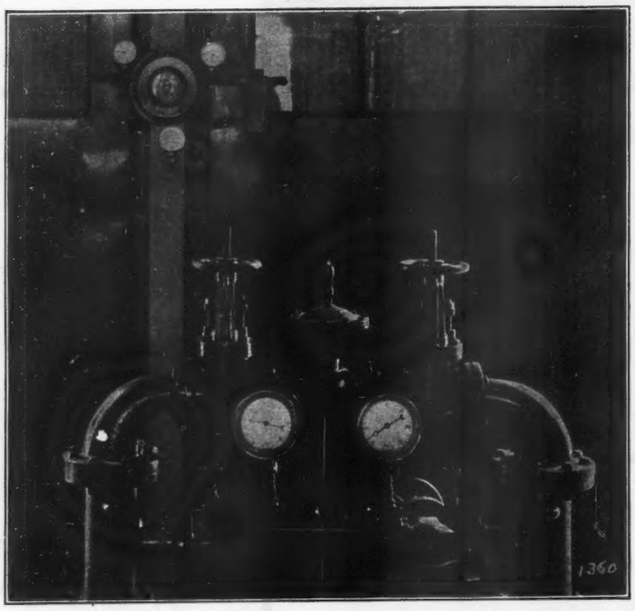
CALMEC:
5333 So. Riverside Drive,
Los Angeles, Calif.

Please tell me all the things I ought to know about the Calmec Cat Line Grip.

_____

_____

_____



Tycos Steam Boiler Gas Fuel Governor (Pilot Operated), maintaining constant steam header pressures on natural gasoline plants by controlling the gas fuel supply to a battery of eight boilers.

Tycos Steam Boiler Gas Fuel Governor (Pilot Operated)

THIS installation insures constant steam pressures under varying load conditions by properly regulating the gas fuel supply to the burners. Full steam pressures are maintained under extreme operating conditions, thus insuring a high efficiency and consistent operation of the boiler plant.

Once adjusted to the desired steam pressures, the *Tycos* Regulator will maintain such pressures without adjustment or further attention from the engineer. Having a high degree of sensitivity its response to steam pressure changes is immediate. Its operation being essentially throttling, only the exact required amount of gas is admitted to the burner at all times.

The *Tycos* Steam Boiler Fuel Governor may be applied to a single boiler, or with a control valve and the gas header, to a battery of boilers. When applied to a battery, a boiler can be cut in or taken out without any variation in steam header pressure, due to the action of the regulator and compensating for such changes.

Write for additional information on this installation and others for the oil and gas industry.

Taylor Instrument Companies
ROCHESTER, N. Y., U. S. A.
Canadian Plant, *Tycos* Bldg., Toronto
Manufacturing Distributors in Great Britain, Short and Mason, Ltd., London.

Tycos
Temperature Instruments
Indicating Recording Controlling

JEFFERSON COUNTY

Danciger et al's No. 1 Dilley, SE NW Sec. 11-5s-7w ....Rigging up to drill deeper; shut down.
Gypsy Oil Co.'s No. 1 Smith, C SW SE SE Sec. 2-7s-7w ..Drlg. 3,390 ft.

JOHNSTON COUNTY

Smith & Knisely's No. 1 Lane, E half Sec. 29-1s-7 .....Shut down 2,254 ft.

McCURTAIN COUNTY

Utopia Pet. Co.'s No. 1 Unknown, SE NW Sec. 14-9s-25 ..Location.
Milton et al's No. 1 Vase, SW NW Sec. 26-6s-21 .....Shut down 1,490 ft.

STEPHENS COUNTY

Smythe et al's No. 1 Johnson, NE cor. Sec. 30-2-8w ....Spudding.
Pandem Oil Co.'s No. 1 Harber, C SE SE Sec. 34-2-9w ....Abandoned 1,882 ft.
Pace et al's No. 1 Voss, C SE NW SW Sec. 23-2s-7w ....Fishing 2,005 ft.
Pace et al's No. 1 Horton, C SE SW SE Sec. 26-2s-7w ....Drlg. 2,795 ft.
Pace et al's No. 1 Butler, C NW NW SW Sec. 35-2s-7w ..Drlg. 2,835 ft.
Porter & Monahan's No. 1 Robberson, SE NW Sec. 23-3s-4w .....Drlg. 3,325 ft.

TILLMAN COUNTY

Allen Bros.' No. 1 Howell, SW NE SE Sec. 13-1-17w ....Drlg. 400 ft.
Staley-Chenault's No. 1 Crane, NE SE Sec. 25-4s-14w ..Drlg. 1,500 ft.
Nance et al's No. 1 Massie, NE NW Sec. 36-1S-6w .....Location.
Landfair and others' No. 1 Smith, SE SW SE Sec. 6-2s-16w .....Shut down 2,535 ft.

OKLAHOMA PANHANDLE

Skaar's No. 1 Hitch, NW cor. Sec. 25-1-15a .....Shut down 250 ft.

WILDCAT OPERATIONS IN KANSAS

(Descriptions are East unless otherwise marked)

(Continued from Page 52)

PRATT COUNTY

O'Haver & Jones' No. 1 Garacke, C NE SW Sec. 7-26-14w .....Drlg. 1,220 ft.

ELLIS COUNTY

Streeter & Stearns' No. 1 Leiker, SW NE Sec. 26-13-20w..Drlg. 1,200 ft.
Byrene et al's No. 1 Fisher, NW SE Sec. 4-11-20w ....Shut down 1,000 ft.
Rush Oil Co.'s No. 1 Gatewood, NW cor. NW Sec. 4-15-20w .....Fishing 2,555 ft.

ELLSWORTH COUNTY

Tatlock et al's No. 1 Sackem, C SW SE Sec. 25-17-9w ..Shut down 675 ft.
The Texas Company's No. 1 Sherman, NE SW Sec. 16-17-6w .....Drlg. 3,550 ft.

FORD COUNTY

McNabb et al's No. 1 Unknown, C SE Sec. 26-27-22w ..Rig.
Swain et al's No. 1 Kenthorne, C NW Sec. 21-25-24w ....Shut down 390 ft.

GRAHAM COUNTY

Gulf Coast Oil Co.'s No. 1 Johnson, C S half Sec. 27-8-25w .....Drlg. 4,232 ft.
Naylor et al's No. 1 St. John, NW SE SE Sec. 27-8-25w..Rig.

GREENWOOD COUNTY

F. Konkay et al's No. 1 Rock, NW NE NE Sec. 7-27-12..Shut down 50 ft.
T. K. Simmons' No. 1 Steele, SE NE Sec. 22-22-12 .....Drlg. 1,425 ft.

HARPER COUNTY

Boeler et al's No. 1 Bear, C NE Sec. 21-31-6w .....Shut down 50 ft.
Tom Slick Oil Co.'s No. 1 Miller, SE cor. Sec. 13-34-8w .....Drlg. 5,189 ft.
Tom Slick Oil Co.'s No. 1 Thompson, NW cor. Sec. 19-32-6w .....Wilcox 4,975 ft.; shut down; total depth 4,978 ft.; hole full water.

HARVEY COUNTY

Superior's No. 1 Regier, SE NW Sec. 11-22-3w .....Rig.
Independent & Reserve Oil Co.'s No. 1 Moulds, C NE Sec. 7-24-1w .....Drlg. 2,995 ft.
Liggett et al's No. 1 Regier, C SE NW SE Sec. 2-23-3w..Drlg. 2,640 ft.
E. W. Marland, Inc.'s No. 1 Neiman, C NE SE NE Sec. 8-24-2 .....Drlg. 1,150 ft.
Deering-Marshall's No. 1 Dick, Sec. 4-25-2w .....Shut down 3,998-4,010 ft.; hole full water.
McCulloch et al's No. 1 Prouty, NW cor. SW Sec. 3-23-1w .....Fishing 2,480 ft.
Mrs. Gay et al's No. 1 Grove, C NW NE NW Sec. 29-23-1w .....Shut down 3,295 ft.
Jolly & Ogg's No. 1 Randall, NE cor. NE Sec. 11-24-1w..Shut down 3,444 ft.
Jolly & Ogg's No. 1 Hupp, SE cor. NE Sec. 22-23-1w ....Shut down 3,220 ft.
Walton Oil Co.'s No. 1 Neiman, C SE SW Sec. 13-14-2 ....Drlg. 2,830 ft.

HODGEMAN COUNTY

Phillips Pet.'s No. 1 Hausman, NW NE Sec. 30-22-22w..Drlg. 4,091 ft.; underreaming 6-in. casing.

JEFFERSON COUNTY

Wichita Oil Co.'s No. 1 Simpson, NW cor. SW SW Sec. 19-10-17 .....Rigged up and shut down.

KINGMAN COUNTY

D. P. Fleeger's No. 1 Ashcraft, SE SW NE Sec. 16-28-7w .....Drlg. 3,035 ft.
White Eagle's No. 1 Lorenz, C NE SW SE Sec. 25-27-5w..Drlg. 3,315 ft.

LANE COUNTY

Robinson's No. 1 Dickerson, Sec. 11-18-27w .....8-in. csg. 2,625 ft.
Blankenship Pet. Co.'s No. 1 Schaeffer, NE cor. NE Sec. 24-16-28w .....Spudded and shut down.

LYON COUNTY

Harry Mortlock's No. 1 Dieboit, NW NE Sec. 24-20-1 ....Drlg. 1,000 ft.

MARION COUNTY

Marshall et al's No. 1 Higgins, NE cor. Sec. 33-19-5 ....Rig.
White Eagle's No. 1 Ucker, NE NW Sec. 24-17-2 .....Drlg. 1,830 ft.
American O. & R. Co.'s No. 1 Urie, NW SW NW Sec. 10-17-3 .....Drlg. 2,994 ft.
Empire's No. 1 Reising, NE NW NW Sec. 34-20-2 .....Wilcox 3,035-75 ft.; total depth 3,-161 ft.; abandoned.

McPHERSON COUNTY

Dixie Oil Co.'s No. 1 Johnson, SW cor. Sec. 20-17-3w....Location.
Harry Skelly et al's No. 1 Neufeldt, SE NE Sec. 19-21-3w..Location.
McCulloch Oil Co.'s No. 1 Cornelius, SW cor. Sec. 7-21-4..Drlg. 2,270 ft.
Kansas Oil Co.'s No. 1 Otto, SW NW Sec. 31-20-1w ....Drlg. 1,500 ft.
Reynolds et al's No. 1 Koohn, NE SE NE Sec. 15-20-2w ..Drlg. 1,085 ft.
McPherson O. & G. Co.'s No. 1 Fisk, SW NE NE Sec. 15-21-2w .....Shut down 2,450 ft.
McPherson O. & G. Co.'s No. 1 Sorenson, C SE Sec. 23-18-2w .....Drlg. 2,600 ft.
Milmac's No. 1 Decker, NW cor. Sec. 11-20-3w .....Fishing 1,500 ft.
Lario et al's No. 1 Diener, SE SW Sec. 10-20-1w .....Drlg. 3,260 ft.
Perry et al's No. 1 Wade, C SE Sec. 20-19-4w .....Drlg. 3,430 ft.
Slick, Pryor & Lockhart's No. 1 Gratton, C NE NW NW Sec. 34-20-3w .....Chat 3,055-3,108 ft.; pump 256 bbls. 2 per cent water.
Helmerich & Payne's No. 1 Klassen, SE NE NE Sec. 14-21-1w .....Drlg. 3,445 ft.
McPherson Gas Co.'s No. 1 Chinberg, NW cor. Sec. 18-19-2w .....Total depth 3,585 ft.; plugging back to 2,992-3,045 ft.; 10 bbls. completed.
Transcontinental Oil Co.'s No. 1 Algers, NE SW Sec. 1-19-5w .....Shut down 3,467 ft.

MORRIS COUNTY

Arrow O. & G. Co.'s No. 1 Kinkle, C NW NE Sec. 8-16-7..Shut down 50 ft.

MORTON COUNTY

White & Chaney's No. 1 Love, NE cor. Sec. 11-4-24 ....Rig on ground.
Richards et al's No. 1 Colby, C SW Sec. 17-4-21w ....Rig on ground.

NESS COUNTY

Continental Oil Co.'s No. 1 Moses, NE SE Sec. 7-18-25w .....Drlg. 4,428-31 ft.; swabbed 120 bbls. in 6 hrs.

OSBORNE COUNTY

Phillips Pet. Co.'s No. 1 Greive, NW SE NE Sec. 6-7-12w..Fishing 3,472 ft.
Mid-Kansas' No. 1 Boyce, SE cor. NW Sec. 18-6-13w ....Drlg. 3,750 ft.

A Piping SERVICE *that Spans the Country*

THE recent consolidation of The Ballwood Company (piping fabricators since 1905) with Midwest completes the span of effective piping service from coast to coast.

It is a service that makes available to users of power plant, industrial process, and oil refinery piping: (1) an unexcelled store of specialized piping experience, (2) a highly competent organization with adequate facilities to function efficiently on any size or type of piping project irrespective of location, (3) the economies attained through large scale operation.

MIDWEST PIPING & SUPPLY CO., INC.
Plants at St. Louis, Los Angeles, and Passaic, N.J. (Ballwood Div.)

Offices: St. Louis - Chicago - Tulsa - Los Angeles - New York (Ballwood Div.)

A Greater MIDWEST PIPING SERVICE

For Strength and Uniformity Use

ANNOUNCEMENT

We wish to announce that all Wire Rope manufactured by us is sold under OUR OWN NAME

We do not manufacture private brands

WICKWIRE SPENCER STEEL COMPANY
41 East 42nd St., New York City

Wickwire Spencer Sales Corp.
1304 The Philtower, Tulsa, Okla.

Acme Tool Co.
Breckenridge, Tex.

T. T. Word Supply Co.
Houston, Texas

A. F. Keck & Co.
Butler, Pa.

WICKWIRE SPENCER
UNIFORM WIRE ROPE

O'Haver & Jones' No. 1 Lunt, C SW NW Sec. 15-28-14w ..Fishing 4,550 ft.
Wilcox O. & G. Co.'s No. 1 Unknown, SW NW Sec. 7-26-15w .....Drlg. 700 ft.

RENO COUNTY

Empire O. & R. Co.'s No. 1 Blitz, NE NW Sec. 36-25-4w .....Drlg. 2,910 ft.
Wilson et al's No. 1 McPhaeters, C S half NW Sec. 22-26-8w .....Drlg. 2,195 ft.; 10-in. csg.
Witt's No. 1 Olsen, C SE NW Sec. 14-22-6w .....Drlg. 1,465 ft.
Skelly Oil Co.'s No. 1 Birkett, NE SW Sec. 30-24-7w ....Drlg. 3,820 ft.
Milmac Oil Co.'s No. 1 Stucky, SW cor. NW Sec. 17-26-5w .....Shut down 3,998-4,018 ft.; hole full water.

RICE COUNTY

Boucher's No. 1 Bieg, Sec. 16-21-10w .....Spudding.
Miller & Detrick's No. 1 Shumway, C SW Sec. 2-20-9w ..Underreaming 8-in. csg. 3,100 ft.
Burgher's No. 1 Fair, C SE NE NE Sec. 14-21-10w .....Drlg. 300 ft.
Derby Oil Co.'s No. 1 Johnson, C NW NE SE Sec. 24-20-6w .....Skidding rig 2,300 ft.
Milmac's No. 1 Cain, C SE Sec. 29-19-7w .....Drlg. 3,045 ft.
Curtis et al's No. 1 Green, C NW Sec. 33-19-6w .....Location.
Danciger et al's No. 1 Bell, C SW Sec. 16-19-8w .....Shut down 50 ft.
McCullough et al's No. 1 Williams, C NE Sec. 35-20-8w..Rig.

RILEY COUNTY

Arkansas Fuel Oil Co.'s No. 1 Martin, SE NE SW Sec. 24-8-4 .....Drlg. 1,200 ft.
Grey et al's No. 1 Smith, NE SE Sec. 30-6-6 .....Shut down 1,970 ft.
Derby & Shaw's No. 1 Lindstrom, NE cor. Sec. 32-7-5e ..Shut down 2,246 ft.

RUSSELL COUNTY

Cress & Hacke's No. 1 Unknown, SE cor. Sec. 6-13-12w..Rig on ground.
Midwest Exploration's No. 1 Benson, SW cor. Sec. 4-14-15w .....Drlg. 2,635 ft.
Prairie Oil & Gas Co.'s No. 1 Brungardt, C NW SE NW Sec. 31-12-15w .....Drlg. 3,041 ft.

ROOKS COUNTY

Kruger et al's No. 1 Stels, NW SE SW Sec. 12-9-16w....Shut down 50 ft.
Central Commercial's No. 1 Baxa, Sec. 22-9-17w .....Drlg. 2,470 ft.

RUSH COUNTY

Milmac's No. 1 Mohr, C NW Sec. 11-18-16w .....Shut down 50 ft.
Danciger Oil Ref. Co.'s No. 1 Pivonka, NE cor. SW NE Sec. 17-19-17w .....Drlg. 4,044 ft.

SALINE COUNTY

Dixie Oil Co.'s No. 1 Thorstenburg, NW NE Sec. 10-16-3w .....Drlg. 3,305-08 ft.; 20-bbl. show 3,490 ft.; hole full water; shut down.
Austin et al's No. 1 Olsen, NW SW SE Sec. 10-15-4w ... Drlg. 3,070 ft.
Templeman's No. 1 Lanbengager, C SW Sec. 20-15-5w . Drlg. 2,975 ft.
Twin Mounds' No. 1 Wels, NW NE NW Sec. 20-13-4w .....Shut down 700 ft.

SEDGWICK COUNTY

Moore's No. 1 Stewart, C NE SE NW Sec. 18-28-1w ....Drlg. 1,955 ft.
Tavender et al's No. 1 McLean, SE SW SE Sec. 23-26-1w .....Rig.
Wentz Oil Corp.'s No. 1 Allison, NE NW Sec. 24-26-2 ....Drlg. 2,720 ft.
Wilson et al's No. 1 Ottaway, SW NW Sec. 16-28-2w ....Rig.
Marland and Amerada's No. 1 Sensorth, NW cor. Sec. 25-28-4w .....Drlg. 3,700 ft.
Boyle's No. 1 Sandusky, NW NE SE Sec. 34-26-1w .....Simpson 3,450-3,510 ft.; hole full water; abandoned.
Barnett O. & G. Co.'s No. 1 Davidson, NW cor. NW SW Sec. 27-26-1e .....Drlg. 3,358 ft.
Kellar & Lewis' No. 1 Buckles, NW cor. SE Sec. 3-28-1w..Drlg. 200 ft.
Washabaugh et al's No. 1 Harrison, NW cor. NE NE Sec. 3-26-2w .....Wilcox 3,910 ft.; drlg. 3,923 ft.; hole full water.
LaFont et al's No. 1 Carlton, C SE SE SW Sec. 24-28-1e..Shut down 1,680 ft.

SHAWNEE COUNTY

Jenkins & Scott's No. 1 Sherman, NW NE Sec. 28-10-15 .....Rig.
Jenkins & Scott's No. 1 Haden, NE SE Sec. 8-12-14 ....Shut down 750 ft.

SHERIDAN COUNTY

Mandalin O. & G. Co.'s No. 1 Unknown, C SE SW SW Sec. 27-7-26w .....Spudded; shut down.

SHERMAN COUNTY

A. L. Henson et al's No. 1 Murry, NE cor. SE NW Sec. 22-7-40w .....Shut down 3,035 ft.

STAFFORD COUNTY

Gibson's No. 1 Mueller, C SW Sec. 11-23-14w .....Drlg. 500 ft.
Phillips Petroleum's No. 1 Houghton, SW cor. Sec. 20-21-12w .....Shut down 50 ft.

STEVENS COUNTY

McKenna's No. 1 Unknown, C NW NW Sec. 29-33-36w..Shut down 50 ft.
Trees Oil Co.'s No. 1 Thompson, C NE SW Sec. 3-35-38w..Drlg. 2,230 ft.
W. Sidwell et al's No. 1 Kelly, SW cor. NE Sec. 16-34-38w .....Shut down 1,600 ft.

SMITH COUNTY

Phillips Pet.'s No. 1 Clydesdale, SE NW Sec. 23-5-14w ..Drlg. 3,170 ft.

SUMNER COUNTY

Hatfield's No. 1 Dauber, NE cor. Sec. 18-30-1w .....Rig.
Kingwood Oil Co.'s No. 1 Stayton, C NE Sec. 18-31-2w ..Drlg. 1,750 ft.
Slick et al's No. 1 Peasel, NW cor. Sec. 33-31-1w .....Drlg. 2,675-2,710 ft.; hole full water.
Lario O. & G. Co.'s No. 1 Osborne, NE SE Sec. 21-30-1w .....Underreaming 8-in. csg. 2,670 ft.
E. K. Carey & Larado Oil Co.'s No. 1 Welsch, SW SE Sec. 9-34-1e .....Underreaming 8-in. csg. 2,800 ft.
Mid-Continent Pet. Corp.'s No. 1 Clark, SE cor. Sec. 31-34-3w .....Wilcox 4,865-70 ft.; hole full water; abandoned.
Shell Pet. Corp.'s No. 1 Armstrong, NE cor. Sec. 12-33-1e..Drlg. 3,065 ft.
Davidson et al's No. 1 Strickland, SW cor. SE Sec. 12-35-1w .....Rig.

TREGO COUNTY

Dixie & Amerada's No. 1 Reitmayer, C NE NE Sec. 19-14-21w .....Drlg. 825 ft.
Prairie Oil & Gas Co.'s No. 1 Kutina, C NE SW NE, Sec. 29-15-21w .....Drlg. 3,185 ft.
Producers & Refiners Corp.'s No. 1 Kingsley, C SE NW NW Sec. 24-14-21w .....Drlg. 960 ft.
Phillips Pet. Co.'s No. 1 Spitz, SE cor. Sec. 24-12-25w ..Drlg. 3,030 ft.
Mid-Kansas' No. 1 Ridgeway, NE SW Sec 28-12-21w ..Drlg. 3,941 ft.
Day et al's No. 1 Gugler, SW NE NE Sec. 36-12-21w ....Shut down 50 ft.
Day et al's No. 1 Unknown, NE NW SW Sec. 2-11-21w ..Drlg. 3,040 ft.

WASHINGTON COUNTY

McCool & Vincent's No. 1 Linn, NW cor. NE Sec. 27-4-3..Drlg. 2,750 ft.

WOODSON COUNTY

Shaffer & Howell's No. 1 Levering, CSL SE Sec. 12-25-14..Shut down 450 ft.

WILDCAT OPERATIONS IN NEBRASKA

FRANKLIN COUNTY

U. R. Drlg. Co.'s No. 1 Brunkle (twin well), C NW SW NE Sec. 2-3n-13w .....Rig.

CHASE COUNTY

Chase Pet. Co.'s No. 1 Ingold, C NE Sec. 24-6n-38w ....Shut down 4,200 ft.; will run 6-in. csg.

FURNAS COUNTY

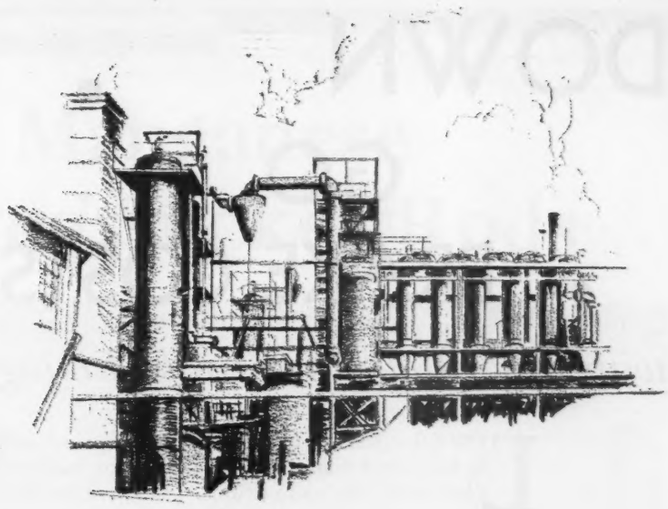
Southwestern Pet. Corp. of Nebraska's No. 1 Montague, SE SW SW Sec. 28-1n-22w .....Shut down 1,750 ft.
Graham Bros.' No. 1 Edwards, NW SW Sec. 13-2n-22w ..Drlg. 3,250 ft.

RICHARDSON COUNTY

Norton et al's No. 1 Hauser, NE cor. Sec. 26-1-14 .....Location.

WEBSTER COUNTY

Mid-States Exploration Co.'s No. 1 Platt, C SE one-half Sec. 3-1n-11w .....Shut down 555 ft.



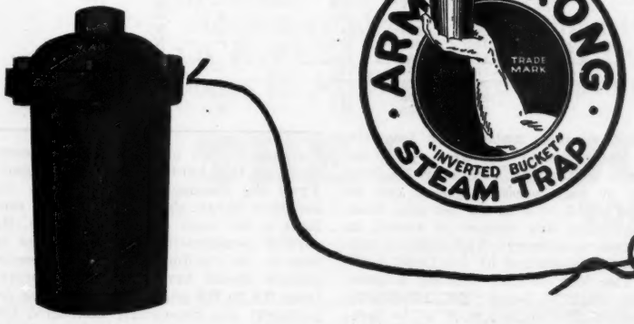
Saving Refinery Steam along the line

ALL along the steam lines, Armstrong Traps in suitable sizes and types are saving money for refinery operators. From the high pressure line in big power plants down to the smallest heating units, Armstrong Traps are handling condensate. Each one is especially engineered for its job by an organization that makes no other product.

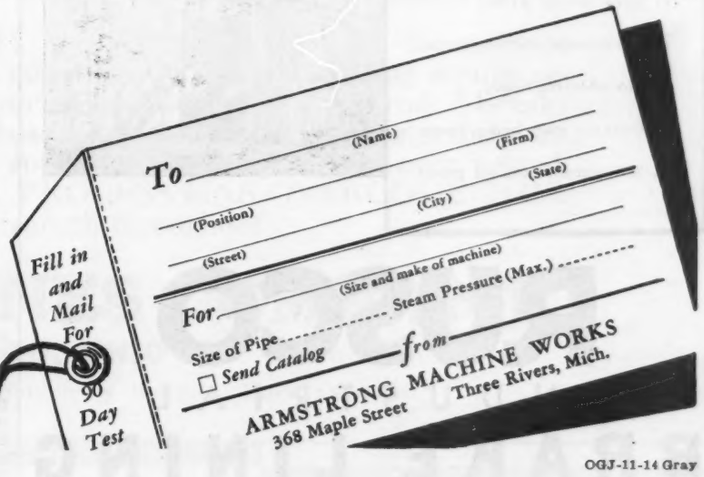
Condensate in steam lines and equipment not only displaces useful steam, but is a source of danger to steam engines and pumps. Armstrong traps remove it as fast as it forms, automatically and with practically no attention. Oil, scum and sediment are discharged with the condensate. Thousands of Armstrong Traps have been operating for years with no expense for repair parts.

The Armstrong Trap also discharges entrained air automatically and without any attention whatever. Its simplicity is amazing . . . all working parts are completely enclosed and protected by the body and cap.

It's small enough to be supported by the pipe lines in which it is placed. The tag below entitles you to a 90-day trial without cost to you or obligation. Just use the tag.



ARMSTRONG MACHINE WORKS
368 Maple Street, Three Rivers, Michigan
District Representatives in 42 Cities



OGJ-11-14 Gray

DOWN • GO • BRAKE COSTS

with Rusco Industrial Brake Lining

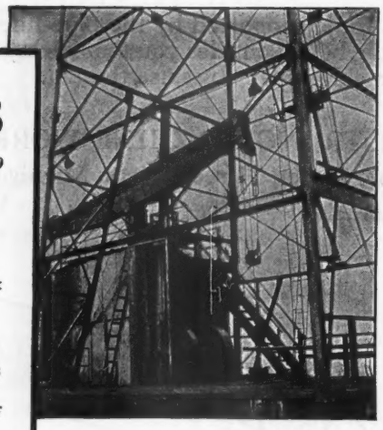
LOWER costs on brake lining—less time and labor lost because of relining brake bands—less wear on brake drums. These are the savings you realize by using Rusco Industrial Brake Lining on your oil field equipment.

Rusco is made for hard, heavy duty service. The long fibre, Canadian Chrysotile asbestos from which it is manufactured is the strongest and toughest asbestos mined—the best heat resistant.

Special looms on which Rusco is woven were designed and built in the Russell plant and weigh over 10 tons, the heaviest brake lining looms in the industry. These mighty looms literally pound the threads into one sturdy, solid woven unit—making a product of remarkable strength and durability.

Rusco Industrial Brake Lining is manufactured in all sizes up to 20 inches in width.

If you do not know the name of the nearest Rusco supply dealer, write us for complete information. Address Dept. V-18, The Russell Mfg. Co., Middletown, Conn. In Canada, The Russell Mfg. Co., Ltd., St. Johns, P. Q. Also manufacturers of Rusco Belting.



5 REASONS

Why Brake Costs Go Down with Rusco

1. Gives longer service
2. Withstands frictional heat
3. No offensive fumes
4. Does not score brake drums
5. Waterproof and oil proof

RUSCO
INDUSTRIAL
BRAKE LINING

MOISTURE IMPORTANT IN CALCIUM GREASE MAKING

(Continued from Page 46)

accuracy this paper deals only with the 70 batches made from the 300 viscosity red oil.

To be sure that the data are correct and reliable, no changes have been made during the six months in the formulae of the three different greases and care has been exercised, to have at all times the same grade of mineral oil, the same grade of horse fat and the same grade of rock lime on hand. All three raw materials were constantly tested to meet the standard specifications of the company and its grease department.

The majority of batches have been made of a number 1½ grease, which was merchandized as "high pressure grease" for Alemite, Zerk, Dot, Keystone and similar systems. The formulae for this grease was maintained through all 42 batches as follows:

Horse fat, 11.5 per cent: Rock lime, 1.5 per cent; Texas red oil, 300 viscosity, zero cold test, 87 per cent; melting point 203 degrees Fahrenheit; A.S.T.M. penetration unworked, 270-300: A.S.T.M. penetration worked, 360 maximum; moisture, 0.8 per cent; appearance, transparent, glossy, smooth.

In order to determine the action of normal, excessive and insufficient amount of water upon the consistencies an order was given to the grease department to keep the moisture content during the next two months below 0.8 per cent, in the following two months at around 0.8 per cent and in the two months thereafter above 1 per cent. The following table shows the penetration numbers of the greases made in the first two months having a moisture content below 0.8 per cent:

MOISTURE CONTENT TABLE

Batch No.	Moisture content %	Unworked Penetration A.S.T.M. Nos. Drum No. 1	Drum No. 30	Average	Too soft	Too hard	Normal	W'k'd Pen'tr't'n A.S.T.M. Nos.	Deviation
1	0.3	269	271	270	—	—	X	318	—
2	0.4	284	287	285	—	—	X	326	—
3	0.4	280	283	281	—	—	X	319	—
4	0.4	271	271	271	—	—	X	318	—
5	0.4	283	286	284	—	—	X	324	—
6	0.4	266	269	268	—	X	—	318	—
7	0.4	258	280	269	—	X	—	324	—
8	0.4	260	286	273	—	—	X	327	—
9	0.5	263	268	265	—	X	—	317	—
10	0.5	285	285	285	—	—	X	324	—
11	0.5	278	281	279	—	—	X	326	—
12	0.55	281	284	282	—	—	X	321	—
13	0.6	275	279	277	—	—	X	321	—
14	0.6	269	271	270	—	—	X	319	—
15	0.6	291	296	294	—	—	X	321	—
16	0.6	268	269	268	—	X	—	332	—

The conclusions to be drawn from the above table are to the effect, that the moisture content of a number 1½ cup grease or high pressure grease can be reduced to 0.5 or even 0.4 per cent without involving any danger in regard to a uniform consistency. The moisture content to be determined by the Dean method. The four batches showing a penetration slightly below the established number of 270 do not need to be mentioned, for the penetration is only a few mm. short and is not noticeable by the jobber or user without the aid of a penetrometer.

In the next two months the grease department was instructed to run the grease with a normal moisture content of around 0.8 per cent. The table contains the actual penetration numbers of the next 15 batches. The sample taking was always done by filling a 1-pound can at the end of the discharge pipe after the first drum of the capacity 420 pounds was taken out and by filling a second can of same dimension after the thirtieth drum was taken out. The samples were retained over night and tested on the next morning at a room temperature of 77 degrees Fahrenheit.

Batch No.	Moisture content %	Unworked Penetration A.S.T.M. Nos. Drum No. 1	Drum No. 30	Average	Too soft	Too hard	Normal	W'k'd Pen'tr't'n A.S.T.M. Nos.	Deviation
17	0.7	280	286	283	—	—	X	322	—
18	0.7	268	272	270	—	—	X	324	—
19	0.7	263	265	264	—	X	—	310	—
20	0.8	264	270	267	—	X	—	333	—
21	0.8	287	293	290	—	—	X	329	—
22	0.8	254	268	261	—	X	—	324	—
23	0.8	274	274	274	—	—	X	323	—
24	0.8	289	295	292	—	—	X	324	—
25	0.8	288	289	288	—	—	X	337	—
26	0.8	276	280	278	—	—	X	336	—
27	0.8	264	267	265	—	X	—	326	—
28	0.8	252	290	271	—	—	X	331	—
29	0.8	293	295	294	—	—	X	328	—
30	0.9	267	267	267	—	X	—	319	—
31	0.9	284	284	284	—	—	X	321	—

High Pressure Greases

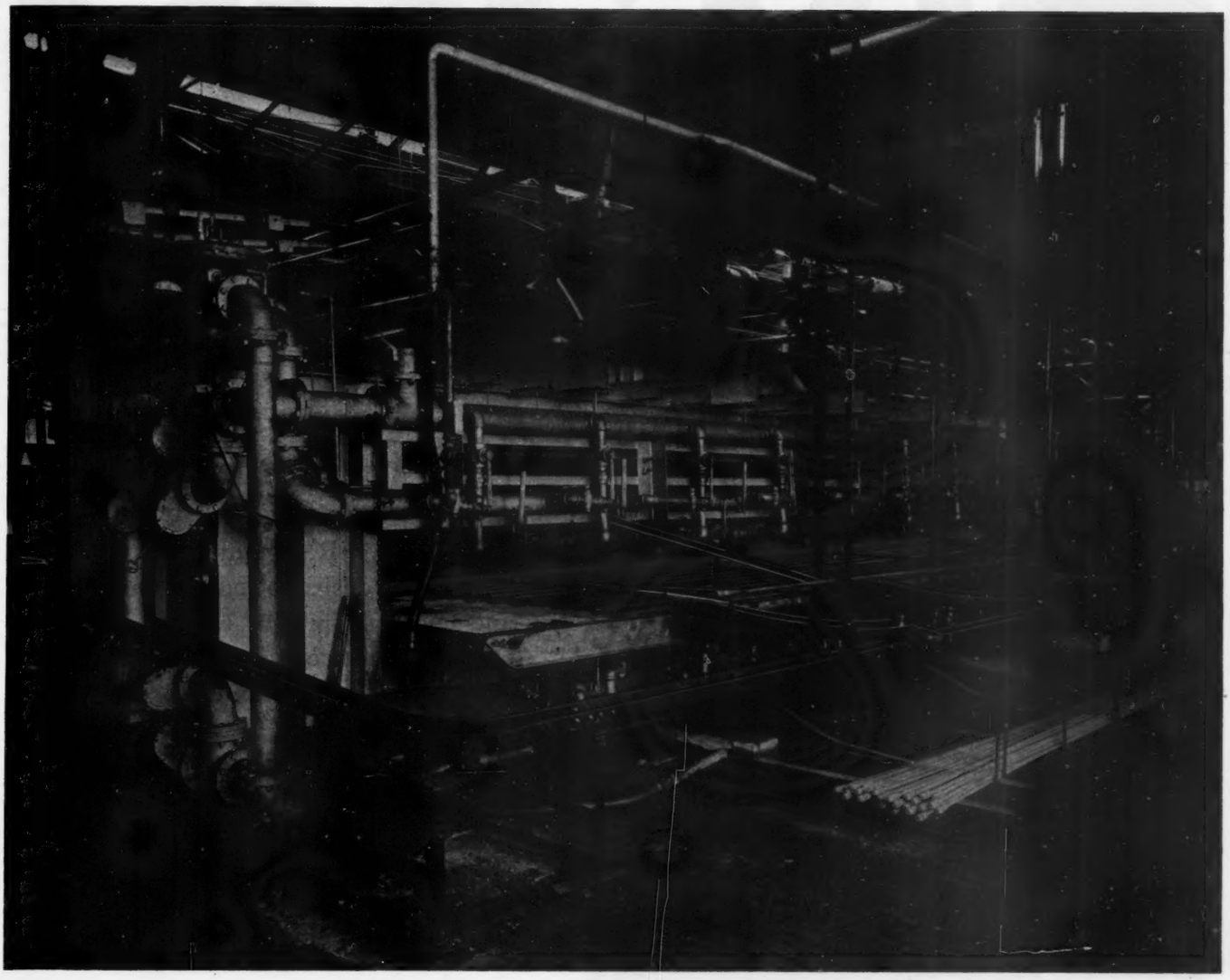
The above given table indicates that high pressure greases with a "normal" water content of .8 per cent have the tendency to produce a grease of a harder consistency than those having a water content of only 0.5 per cent. The 25 per cent of the batches with lower moisture content were only 2.5 numbers harder than specified, whereas the 33 per cent batches of "normal" moisture content were 5.2 numbers harder than specified. The conclusion therefore was drawn that greases with less than 0.8 per cent moisture would produce a more uniform consistency than greases with 0.8 per cent and more.

For the purpose of getting a clear idea as to the effect of excessive moisture content upon the consistency in the next two months, all batches of the same high pressure grease were finished with a moisture content of 1 per cent and higher. The following table shows the results:

Batch No.	Moisture content %	Unworked Penetration A.S.T.M. Nos. Drum No. 1	Drum No. 30	Average	Too soft	Too hard	Normal	W'k'd Pen'tr't'n A.S.T.M. Nos.	Deviation
32	1	267	267	267	—	×	—	318	—
33	1	270	277	274	—	—	×	322	—
34	1	285	290	287	—	—	×	333	—
35	1.1	253	254	253	—	×	—	329	—
36	1.1	268	273	270	—	—	×	324	—
37	1.1	264	297	280	—	—	×	329	—
38	1.1	268	271	269	—	×	—	332	—
39	1.2	270	270	270	—	—	×	331	—
40	1.2	270	270	270	—	—	×	320	—
41	1.2	242	277	259	—	×	—	320	—
42	1.4	285	288	286	—	—	×	327	—

Of the above tabulated 11 batches are only 7 with normal consistency and 4 batches produced a grease which was too hard to meet the specifications. Moisture content of more than 0.8 per cent will in the case of high pressure greases mostly increase the hardness of the product. From the standpoint of uniformity the moisture range above the 0.8 per cent limit is the most undesirable group. By careful consideration it appears, that in regard to uniformity high pressure greases should have a moisture content from 0.4 to 0.6 per cent. The grease department was accordingly instructed and all future batches of high pressure greases

Jones High Manganese *Fully Normalized* Sucker Rods



This is the furnace in which Jones H. M. Rods are normalized—the only one of its kind in the world. ¶ The rods come out with all the forging strains removed—the steel is of the same texture from end to end of the rod. ¶ Breaks in sucker rods usually occur at the base of the upset of the joint or at the point where normalizing stops when the ends of the rods *only* have been heated. OUR FULLY NORMALIZING PROCESS HAS OVERCOME THIS. Jones H. M. Rods have the same strength throughout.

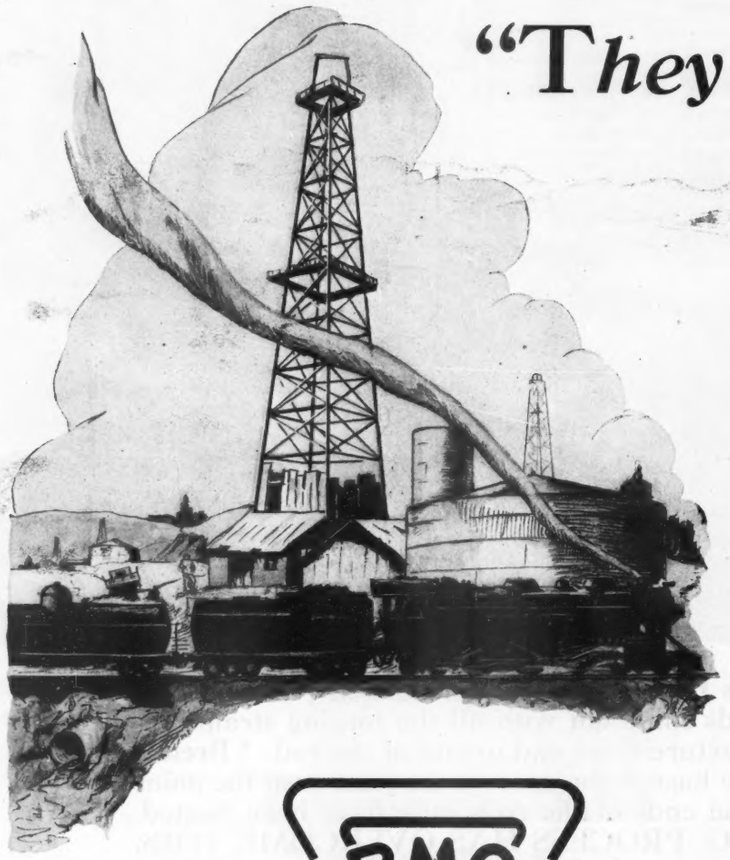
THE S. M. JONES COMPANY

TOLEDO, OHIO

MID-CONTINENT OFFICE: McBirney Building, Tulsa, Oklahoma

ARMCO
INGOT IRON
Sheets and Plates

"They reduce upkeep"



PRODUCERS, refiners and marketers who desire to reduce maintenance and increase profits cannot afford to overlook rust-resisting ARMCO Ingot Iron. Low in cost, long in service, this durable iron is the first choice of many exacting oil companies.

They invest wisely. For ARMCO Ingot Iron has behind it the *longest record of actual service* of any low-cost, rust-resisting sheets and plates.

Your metal problem once known, our engineers will be glad to investigate and recommend. Just call on the office nearest you. There is no obligation.

ARMCO

Back of this familiar symbol is nearly thirty years experience in the manufacture of special analysis iron and steel sheets and plates. When you seek a rust-resisting, low-cost metal be sure to see this triangle, and the words "ARMCO Ingot Iron". It is your assurance of dependable, economical service.

THE AMERICAN ROLLING MILL COMPANY
Executive Offices, Middletown, Ohio
Export: The ARMCO International Corporation
DISTRICT OFFICES:

Chicago	Detroit	Pittsburgh
Cincinnati	New York	St. Louis
Cleveland	Philadelphia	San Francisco

were finished, whenever possible, with a moisture content from 0.4 to 0.8 per cent. Since the survey has brought out sufficient evidence for the conclusion, that differences in the moisture content of high pressure greases between 0.4 and 1.4 per cent do not alter the consistency to a considerable degree, the chemist of the laboratory was instructed to pass all batches having a moisture content between these two limits.

Medium Cup Grease

The possibility of determining in a similar way the influence of the moisture content upon the consistency of a No. 3 or medium cup grease led to another survey, covering 22 batches of such a grease, each batch consisting of 35 drums having a capacity of 420 pounds each. These batches were made during a period of three months according to the following formula:

15 per cent horse fat.

2 per cent rock lime.

83 per cent Texas red 300 viscosity zero C.T. oil.

Melting point 207 degrees Fahrenheit.

A.S.T.M. penetration unworked: 180-200.

A.S.T.M. penetration worked: 300 maximum.

Appearance: Transparent, glossy, smooth.

Moisture 1.4 per cent.

Three groups of medium cup greases of the before given formula were manufactured during a period of three months, having in the first group less than 1 per cent moisture, in the second group from 1 to less than 1.5 per cent, and in the third group 1½ per cent moisture and more.

In the first group the following penetration numbers on the A.S.T.M. penetrometer were obtained:

Batch No.	Moisture content %	Unworked Penetration A.S.T.M. Nos. Drum No. 1	Drum No. 30	Average	Too soft	Too hard	Normal	W'k'd Pen'tr't'n A.S.T.M. Nos.	Deviation
1	1.8	125	148	137	—	—	×	241	—
2	1.4	136	136	136	—	—	×	...	—
3	1.4	142	146	144	—	—	×	236	—
4	1.3	150	150	150	—	—	×	230	—
5	1.2	133	136	134	—	—	×	231	—
6	0.9	145	153	149	—	—	×	237	—

As the table indicates a moisture content of 1.8 per cent produces a nonuniform consistency, for the difference between drum No. 1 and No. 30 is as high as 23 points. A moisture content of 1.2 to 1.4 per cent seems to be the most desirable content for producing a good material of high gloss, transparency and uniformity in consistency.

Batch No.	Moisture content %	Unworked Penetration A.S.T.M. Nos. Drum No. 1	Drum No. 30	Average	Too soft	Too hard	Normal	W'k'd Pen'tr't'n A.S.T.M. Nos.	Deviation
1	0.4	184	186	185	—	—	×	265	—
2	0.6	183	184	183	—	—	×	257	—
3	0.8	182	189	186	—	—	×	276	—
4	0.8	182	191	187	—	—	×	276	—
5	0.8	187	187	187	—	—	×	266	—
6	0.8	186	188	187	—	—	×	249	—

All batches came out normally and the average of the penetration of 186 for unworked and 265 for the worked grease was in conformity with the desired consistency.

The next group was made with a moisture content of 1 to 1.4 per cent in the finished grease. The penetration numbers are given in the following table:

Batch No.	Moisture content %	Unworked Penetration A.S.T.M. Nos. Drum No. 1	Drum No. 30	Average	Too soft	Too hard	Normal	W'k'd Pen'tr't'n A.S.T.M. Nos.	Deviation
7	1	186	189	187	—	—	×	249	—
8	1	184	186	185	—	—	×	254	—
9	1	192	198	195	—	—	×	274	—
10	1	181	183	182	—	—	×	262	—
11	1	188	194	191	—	—	×	257	—
12	1.1	165	183	174	—	×	—	248	—
13	1.1	185	191	188	—	—	×	247	—
14	1.2	183	187	185	—	—	×	253	—
15	1.3	189	189	189	—	—	×	260	—
16	1.3	182	182	182	—	—	×	248	—
17	1.4	177	179	178	—	×	—	253	—
18	1.4	180	180	180	—	—	×	268	—

While the average of 184.66 for the unworked grease falls within the specifications, a close inspection reveals the fact that in this group the consistency could not be controlled as close as in the group having a moisture content below 1 per cent. However, this group produces a grease which breaks down under working pressure to a lesser degree than the greases of the first and third group. The average worked consistency in Group 2, with a moisture content from 1 to 1.4 per cent, is 256.81, compared with 264.83 in Group 1 and 266.75 in Group 3, as indicated in the following table:

Batch No.	Moisture content %	Unworked Penetration A.S.T.M. Nos. Drum No. 1	Drum No. 30	Average	Too soft	Too hard	Normal	W'k'd Pen'tr't'n A.S.T.M. Nos.	Deviation
19	1.5	177	189	183	—	—	×	259	—
20	1.6	175	175	175	—	—	×	252	—
21	1.8	188	190	189	—	—	×	267	—
22	1.9	191	194	192	—	—	×	289	—

The average unworked consistency of the greases in this group is 185, meeting the specifications for this medium cup grease. It will be noticed, that the two batches having 1.8 and 1.9 per cent moisture possess a somewhat lighter body than the two batches with less moisture content. The grease with 1.9 per cent moisture breaks down under working to 289, the highest penetration among all 22 batches.

The conclusions drawn from the results of all 22 batches in this grade of grease are, that a medium cup grease with a moisture content around 1 per cent is the most desirable product.

Heavy Consistency Greases

During the same three months six batches of the same grade of grease but of a heavy consistency were made according to the following specifications:

18.5 per cent horse fat.

2.3 per cent rock lime.

79.2 per cent 300 viscosity Texas red zero.

Melting point 210 degrees Fahrenheit.

A.S.T.M. penetration, unworked 135-150.

A.S.T.M. penetration, worked 250 maximum.

Moisture content below 2 per cent.

Care was being taken that the raw materials used for the manufacturing were at all times meeting the same specifications.

The following table shows the variations in the consistencies:

All three grades, the high pressure grease as well as the two cup greases possess a better and more uniform consistency by keeping the moisture content as low as possible. There is absolutely no necessity to sell any kind of cup greases having a moisture content above 2 per cent. In a great number of grease plants the finished grease is withheld in the kettle until the moisture content has been determined in the laboratory. When the moisture content was found to be too high, the grease was kept under light and heat and stirring continued until the greasemaker thought enough water was driven off.

Conclusions

The facts gathered from the 70 batches in regard to moisture content and con-

Greater Strength
Greater Safety
Longer Valve Life

Combine to make Powell Valves the choice of oil and gas engineers who want the first installation to be lasting.

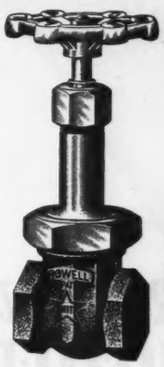


Fig. 375 "White Star" Gate Valve

Fig. 190 "Irenew" Globe Valve

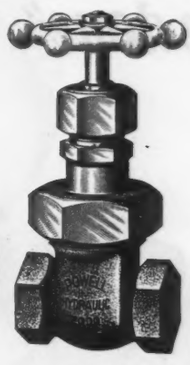


Fig. 178 Hydraulic Gate Valve

The fundamental superiorities of Powell Valves and engineering appliances—including design, foundry practice, careful processing and accurate testing—insure uniform products.

Collectively, these fundamentals account for the striking popularity of Powell Valves throughout the oil and gas fields and refineries.

POWELL PRODUCTS

Bronze, Iron and Steel Globe, Angle, Check, Gate and Safety Valves. Also Oilers, Lubricators, Grease Cups, Water and Oil Gauges, and sundry engineering appliances.

Powell Valves

THE WM. POWELL CO.
2521-2531 SPRING GROVE AVE.
CINCINNATI, OHIO

4 years ago ..they told us..... "it couldn't be done"

Remember NO-CO-RO is..... obtainable only in the products of Norris Bros

Well meaning competitors told us, four years ago, that we were making a mistake. Producers, they said, were more interested in price than in extra quality pumping equipment.

But we went ahead nevertheless. Already known as a super-alloy, NO-CO-RO was so much further improved that we were able to guarantee NO-CO-RO Balls and Seats to outlast any two ordinary balls and seats, and the DROP and Seat to out-perform even the NO-CO-RO Ball and Seat.

Results fully justified our actions. Today producers are *demanding* quality pumping equipment. More than ever before, they realize that the best is only good enough when less frequent pulling jobs and smaller production losses are at stake.

Today, as four years ago, there is only one NO-CO-RO. This veteran alloy, year in and year out, proves its "metal" in the grueling test of bad sand and acid conditions. Its steadfast refusal to chip, pit or corrode has saved hundreds of thousands in pulling expense, valve-check replacements and lost production.

The best way to test the properties of NO-CO-RO is to try it out in your worst service. If it doesn't outlast and out-perform any pumping equipment you have ever used before, there is no obligation to pay for it.

NORRIS BROTHERS, Inc.

Robinson, Illinois

Owensboro, Ky. Fort Worth, Texas Tulsa, Okla.

sistency permit the conclusion that variations in moisture in the limits as given in this survey, do not influence the consistency of the finished grease to such an extent, that it is necessary to hold a finished grease in the kettle until the moisture content has been reduced to the theoretical amount.

If a grease comes out too soft and the water content is above the lower limit there are several reasons for it. Sometimes the fatty oils have not been boiled long enough, sometimes they may have different saponification numbers, or the lime may be too old and contains more carbonates due to excessive storage or it might be, that a portion of the lime has been added too late and instead of going into combination, has settled on the bottom of the kettle.

On the other hand, if a grease comes out too hard and the water content was found to be proper, it is possible, that a better grade of soap stock had been secured, which naturally produces a harder finished material.

However, the object of this survey was to find out, if variations of the moisture content in the finished grease would be of considerable influence upon its consistency. After concluding this survey and after comparing the retained samples of the different batches the plant management was satisfied, that between 0.8 and 1.8 per cent moisture content the water would not influence the consistency to such a degree, that it would be advisable to insist on an always uniform moisture content of exactly stipulated percentage for the different grades of greases. The policy of the grease making department underwent after this survey a revision and the following specifications for the manufacturing of transparent and glossy greases from 300 viscosity Texas red oil were issued:

	Moisture %
Hard cup grease	1.2–1.6
Medium cup grease	0.8–1.4
High pressure	0.4–1

For the manufacturing of greases from 100 viscosity pale oil specifications are not quite the same; there are some variations in regard to established A.S.T.M. numbers for the different grades of hardness beginning with the softest of No. 0 and the hardest of No. 7; the moisture content likewise is slightly different from the specifications for greases made from 300 viscosity oil.

GASOLINE GUM CONTENT IS MORE IMPORTANT

(Continued from Page 46)

orating dish, and evaporated in a steam oven. The technique of using a rubber stopper to close the boiling flask during oxidation is questionable. It was the experience of the writers during their first use of their method to obtain results that apparently were too high and these could not be checked with the desired degree of accuracy. However when carefully selected corks were used in place of the rubber stoppers this difficulty was overcome. It seems that the vapors of the gasoline in constant contact with the rubber during the oxidation period dissolves a part of the rubber, and on evaporation of the gasoline the rubber is deposited with the gums formed.

Sample No.	Steam oven test	Oxygen gum test
1	1.2	3.0
2	1.5	13.6
3	1.3	54.0
4	4.2	42.0

It can hardly be said that the oxygen gum test is a measure of the stability of the hydrocarbons present in gasoline. Two different gasolines may show the same amount of gum by this test, however, the oxidation that produced the gum in one gasoline, may have been completed in the first 30 minutes of the test while the reaction in the second sample may not be completed at the period of five hours. The observation on a large number of gasoline samples during oxidation offered interesting results. Some gasolines oxidize in the first hour, forming nearly all of the potential gum that can be formed under those conditions, the further oxidation brings only a very slight increase in potential gum. Other gasolines give hardly any noticeable amount during the first hour of oxidation, and the rate of oxidation increased with time.

Although both samples show the same amount of potential gum, the first consists of unstable hydrocarbons, which would oxidize in a short period or in the motor, while latter samples would probably remain in storage for a long period without appreciable formation of gum. The same gasoline may deposit gum in one motor and will not deposit in the other, depending on the operating temperature of the motor. But the gum once started to deposit it will continue depositing even using more stable gasolines for the gum has attraction for the peroxides that are formed in the manifold. The first deposition starts when, after using an unstable gasoline, the motor is not in operation, these oxides left in the manifold condense and polymerize, thus depositing the initial gum. On second operation the deposition of gum will take place even during the operation.

Products of Oxidation

What is referred to as gum in gasoline is recognized generally as the resinous mass, amorphous in structure, nonvolatile, found in the carburetor and intake manifold of the motor, or left in a dish after evaporation of gasoline. The chemistry of the reaction which brings the gum formation from the unsaturated products in the gasoline is little understood, however what work has been done is in fair agreement with respect to the initial reaction in which the oxidation of the more sensitive hydrocarbons takes place. The mechanism of the oxidation, probably due to its complexity, has received little attention from the investigation. The probable assumption is that the unstable hydrocarbons unite with atmospheric oxygen forming peroxides and the gum is the product of the polymerization of these peroxides. That the oxygen is the important factor in gum formation is indicated by the following test. The samples of gasoline were evaporated in atmosphere of steam, with air completely excluded, gave identically the same results in glass and copper dishes, neither temperature nor time element came into consideration. While on the other hand the samples evaporated in air atmosphere gave higher gum values depending on temperature, the time of exposure and the catalytic effect of copper dish.

The following results were obtained in the sample of a regular grade of low gum gasoline.

Description of test—	mg. per 100 cc.
Steam oven test in glass dish	1.5
Steam oven test in copper dish	1.5
Oxygen gum test	2.0
Steam bath air atmosphere in glass	2.0
Steam bath air atmosphere in copper dish	3.5
Electric oven at 300 degrees Fahrenheit in glass dish	42.0
Electric oven at 300 degrees Fahrenheit in copper dish	197.0
Oxygen test using rubber stopper during oxidation	25.0

Another test was made on four samples of premium grade of gasoline using the various methods; the following results were obtained.

	Electric at 175° F.	Oven in air at 250° F.	Atmosphere at 350° F.
	6.8	183	18.1
	8.0	370	24.1
	10.4	274	16.2
	14.0	137	27.8

From the results one can readily see that there is no limit to gum formation. The higher the temperatures are, the more gum is formed, although the evaporating dish may not show all in the residue. The nonvolatile residue indicates only the oxidation of products that have been polymerized during the test. The oxidation of products which are not

You *can't* control this monster ~

but you **can**

O. W. I. Type "C" Control Head on Air Lift Hookup in Maud Pool, Greater Seminole District, Oklahoma

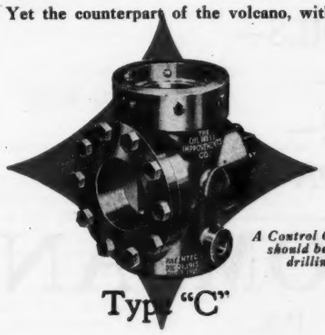
control the tremendous and dangerous force of a flowing Well with the Control Casing Head

The power of the earth is boundless, as seen by the roaring volcano. No human has yet conceived a means to throttle its deathly spew.

Yet the counterpart of the volcano, with its devastating lava, is the flowing well, with its torrent of oil—spraying the danger of fire and death to man and destruction of crops and property over a wide area—besides dissipating its own valuable production. And for this last force, human ingenuity has devised a rigid master, the O.W.I. (original and only) Control Casing Head.

The pressures encountered in drilling for oil, or after oil is reached, are mastered by the Control Casing Head and made to do whatever is desired. No flow comes too soon or is of such force that a simple turn on the Control Head does not shut it in at once. No accident above ground is threatening to the head of the well, as long as a Control Head is in use. A Control Casing Head is the solution for all pressure problems at the head of the well.

We also manufacture Roller Oil Savers, Casing Heads, Apex Polished Rod Stuffing Boxes, Chambered Control Heads and high pressure fittings for oil and gas wells and pipe lines. Write for catalog and quotations.



A Control Casing Head should be on every drilling well.

Type "C"

THE OIL WELL IMPROVEMENTS CO.
Tulsa, Okla.

SKILLED SUPERVISION

Guarantees the Quality

OF GULF PRODUCTS

COASTAL AND PARAFFINE CRUDES—
GASOLINE—LUBRICATING OILS—
NAPHTHA—GAS—OILS—
WAX—PETROLEUM COKE—
CYLINDER—ENGINE—CORDAGE

GULF REFINING COMPANY

General Sales Offices: PITTSBURGH, PA.

District Sales Offices

New York, Boston, Philadelphia, Louisville, Atlanta, Houston, New Orleans

—Ocean Terminals—

Boston (Beverly) Mass.
Providence, R. I.
New York Harbor (Bayonne, N. J.)
Jacksonville, Fla.
Port Tampa, Fla.
Mobile (Magazine Point, Ala.)
Philadelphia (Girard Point, Pa.)
Charleston, S. C.
Savannah, Ga.
New Orleans (Gretna, La.)
Port Arthur, Texas
Galveston, Texas

polymerized passes out with the gasoline vapors. These unpolymerized oxides are noninjurious to the motor, they pass into the combustion chamber with the rest of the gasoline vapors. In vapor state they do not readily polymerize, for they are defused among other gases and do not combine to form a solid mass. They are not attracted by metals but the gums have an affinity for these peroxides. We have suspended various metals in gasoline vapor and air mixtures and no deposit was noticed on any of these metals, but if a metal coated with a small amount of gum was exposed to these vapors, a noticeable amount of gum accrued. The reason that these oxides exist in vapor state is proven by collecting these gasoline vapors and air mixtures and absorbing in gum free gasoline. Thus given a chance to come in contact and polymerize on evaporating in steam oven the gum is deposited in the dish.

It is reasonable to suppose that as long as the motor is free from gum deposits no gum should be deposited during the operation, but when motor is not in operation the peroxides left in the manifold on standing will deposit gum. On next operation the oxides will be attracted by the gum and the deposition will be accelerated by the increase of the gum present.

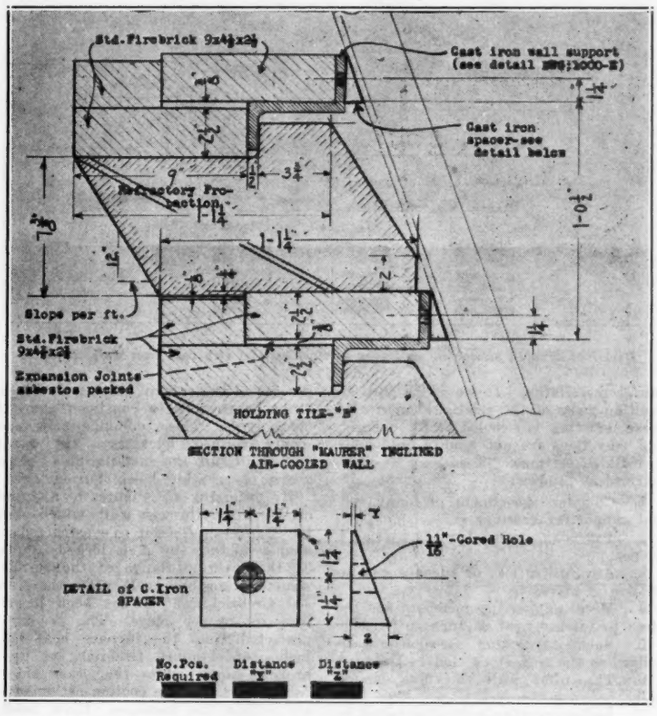
We have devised a method for measuring the resistance to oxidation of the unsaturated hydrocarbons, or in other words the stability of the unsaturated hydrocarbons in the gasoline. The method consists of passing the gasoline vapor and air mixtures through a tube corresponding to an intake manifold, which is kept at approximate intake manifold temperature, absorbing vapors in gum free gasoline evaporating the gasoline in steam oven and weighing the residue. No gum deposit was noticeable in the tube, but on evaporation the absorbed vapors gave good indications as to the stability of the gasoline.

USE IMPROVED TYPE AIR-COOLED FURNACE WALLS FOR OIL STILLS

By A. L. Nugey*

It has always been the custom to set stills over low settings, which is due probably to two reasons; in the first instance, the advantages of large still-furnace volumes are either unknown or misconstrued, and secondly, difficulties will be experienced in maintaining the condition of high still settings within reasonable anticipated costs. Even high-grade refractories fail to sustain the accumulative compressive loads at high furnace temperatures in the present type of settings. When it becomes necessary to repair the furnace lining, practically the entire setting must be disturbed.

With low settings, reducing fires can only be expected, and it is obvious that these low furnace temperatures impair proper combustion, due to ineffective gas mixing. High settings, with corresponding enlarged furnaces provide sufficient combustion capacities that overcome many difficulties and afford increased thermal efficiencies. Of course the use of solid refractory walls in higher still settings would usually result in failure, in several ways. The chief one may be attributed to their rigid construction which induces severe expansion strains that rupture or bulge the wall. Consequently, the service refractory lining will break away from its bonding, and eventually portions will fall into the furnace. The other failure is caused by insulating the exterior walls too heavily; this interferes with proper heat dissipation, naturally plastic deformation and finally slag accumulation will result, which destructs the refractories.

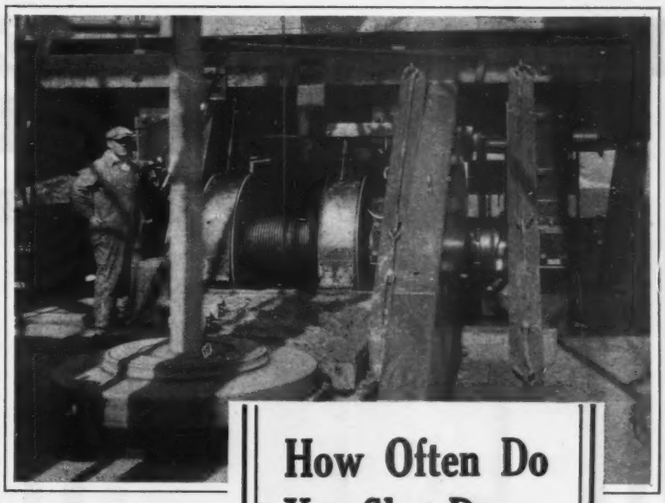


Detail of Maurer air-cooled wall (for inclined wall) (with cast iron wall supports).

Boiler Settings

The trend, in modern boiler settings, has been towards the thinner wall, so as to overcome plastic deformation, which can be attained by sectionally supporting the wall, so as to eliminate accumulative loading. In this instance, several manufacturers have devised sectionally supported air-cooled walls, which have passed the severe tests of both central power stations and industrial plants, and now have become an integral part of modern furnace wall construction. Of the many types of air-cooled walls devised, their basic

*Research engineer, Rahway, N. J.



How Often Do You Shut Down for BRAKE RELINING?

It is almost certain that you can reduce the number of those shut-downs by standardizing on Ferodo Brake and Clutch Linings.

These extra-tough, bonded asbestos Linings have repeatedly shown that they do last longer, even under the hardest sort of punishment—the sort oil-field work gives.

Furthermore, Ferodo Linings resist water, oil and grease to an astonishing degree; they do not spark or burn, glaze or slip; and they always give smooth, sure braking at any speed or temperature.

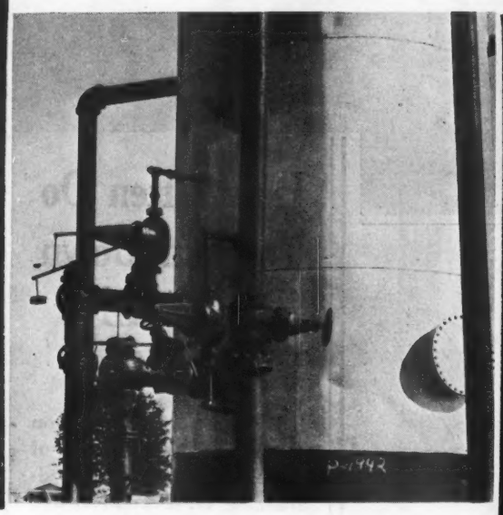
It is a real economy to use Ferodo Linings.

[Also: Ask for samples of Permanite — the original highly-compressed asbestos sheet packing.]

FERODO AND ASBESTOS
Incorporated
Factory and General Offices:
New Brunswick, New Jersey
K. 11-14-29

FERODO
REGISTERED
FRICTION LINING

DEPENDABLE level control for separators



Davis Float Boxes on oil and gas separator, Continental Oil Co., Earlsboro, Okla.

THE Davis Float Box has earned an enviable reputation in oil fields for dependable operation. It maintains liquid levels in closed tanks, such as oil and gas separators, with consistent accuracy and without requiring frequent attention.

This automatic level control, with balanced valve, is available either for direct action or for remote control. On both services it has ample power to handle liquids of any gravity. Other uses are: as a relief or drain valve on absorption towers, stills, receivers or run down tanks; and as control valve on make-up line to storage tank, hot well, or condensation receiver.

Catalog 11, on Davis Valve Specialties for refinery and oil fields service, sent free on request.

G. M. DAVIS REGULATOR CO.
409 Milwaukee Avenue
CHICAGO, ILLINOIS

WESTCOTT & GREIS, Inc.
Sales Engineers
TULSA LOS ANGELES DALLAS

Automatic valve makers for over fifty years

DAVIS VALVE SPECIALTIES

O&GJ 11-14 Gray

principles are similar, that is to sectionally support the wall so as to relieve accumulative loads on the brickwork, and secondly to provide preheated air for aiding combustion, without any extra cost, and reduce repairs and maintenance charges. The possibilities of preheated air have been long realized and the economies obtained through its use is particularly attractive.

The advent of oil and gas burning, which is unequalled by any other fuel and with pulverized coke and coal running close seconds depend upon the use of preheated air, in order to obtain increased efficiencies. Because of numerous demerits with all of the existing types of air-cooled furnace walls, there immediately occasioned a search for a better air-cooled furnace wall that would be adaptable to oil still settings and approximately 50 per cent cheaper in cost of initial installation. It would be well to mention some of the relative demerits of these existing air-cooled wall designs, and why they are not readily applicable to oil still settings. These may be summarized as follows:

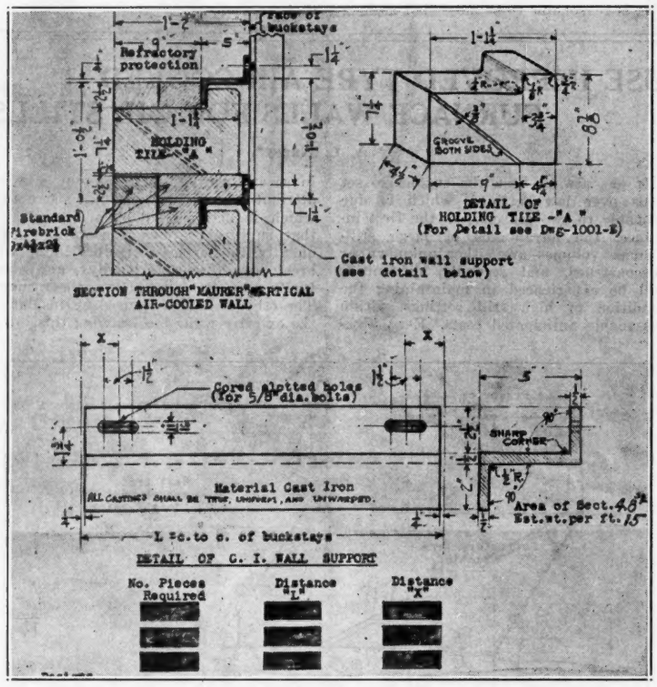
1. Complex assortment of many special supporting castings.
2. Too many special refractory shapes.
3. Air infiltration, or furnace gas intrusion is excessive.
4. Metal supporting members are too close to intense heat of furnace fireside.
5. Shelf supporting air-cooled walls fail when the refractory shelves fracture.
6. The total wall thickness is too great.
7. Self-supporting units suspended by metal frames are too large in size.
8. Both horizontal and vertical air circulation is impossible unless special provisions are made.

Considering the relative values, the probable solution in a simple and economical air-cooled wall design suitable for oil stills, cracking coil furnaces, pipe stills, etc., maye be pointed out in the wall manufactured by Henry Maurer & Son. The reason why this wall is cheaper is due to the fact that all the materials used in its construction are all of standard units. No special hangers are needed, neither are any special wall brackets employed. Each wall unit consists of one holding tile and only standard firebricks, which have been worked out in standard brick coursing; this is an exclusive patented feature.

Close examination of the accompanying illustrations will enable one to note that this design has been created upon correct and well established principles. The supporting steel is thoroughly flexible and permits ventilation in both directions. A rather novel feature is disclosed in the manner that the standard firebricks are laid, their respective jointing is broken in both directions. The supporting steel is maintained at a maximum distance of 9 inches away from the intense heat of the furnace fireside, which is far greater than in any other design examined. No strains can be transmitted from unit to unit as the expansion is fully absorbed both vertically and laterally.

Steel Support

The supporting steel built up of structural shapes excludes the possibility of air or gas interleakage. The method of construction devised maintains the equi-


Refractory protection
HOLDING TILE - "A"
Standard firebrick
SECTION THROUGH "MAURER" VERTICAL AIR-COOLED WALL
Face of buckstays
Cast iron wall support (see detail below)
DETAIL OF HOLDING TILE - "A" (For detail see Dwg-1001-E)
Groove both sides
Cored slotted holes (for 5/8" dia. bolts)
Sharp corner
Material Cast Iron
Area of Sect. 4.6 sq. in.
Est. wt. per ft. 15 lbs.
L c. to c. of buckstays
DETAIL OF C. I. WALL SUPPORT
No. Pieces Required
Distance "A"
Distance "X"

Detail of Maurer air-cooled wall (for vertical wall) (with cast iron wall supports).

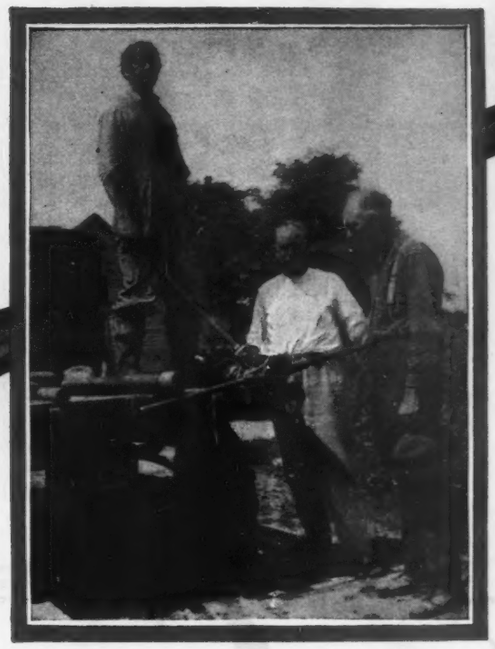
librium of the column section, and in addition is cheaper to construct than the older types. These columns more commonly termed buckstays are readily spaced to suit the installation of access doors, observation holes, burners, etc.

By referring to Figure 1, a typical cross section through wall, which shows the Maurer wall as it is constructed, the simple holding tile A is locked in place by the inverted flange of the standard structural zee-bar at B, after the standard firebrick seat C has been inserted into its proper place. The zee-bar is protected from the furnace heat by 9 inches of standard firebrick set up in broken joints, while the other side is fully exposed to the cooling action of the air within the passages. Each holding tile A supports one and one-half standard firebricks as indicated by letter D.

The upright flange of the zee-bar is secured to the buckstays in a manner to allow lateral expansion and to permit cooling of the entire area of both buckstays and zee-bar flanges. Without any special alterations or modifications the wall design is readily adaptable to any type of still. It will also be noted that both surfaces of the holding tile A have been provided with angular grooves at E, which when dipped into a batter of water and fire clay form a sealing wad, which seals up all vertical joints indefinitely. Figure 2 illustrates the manner in which any of the units can be removed without disturbing any other portion of the wall. The exterior wall may consist of hollow tile or a combination of insulation and metal casing.

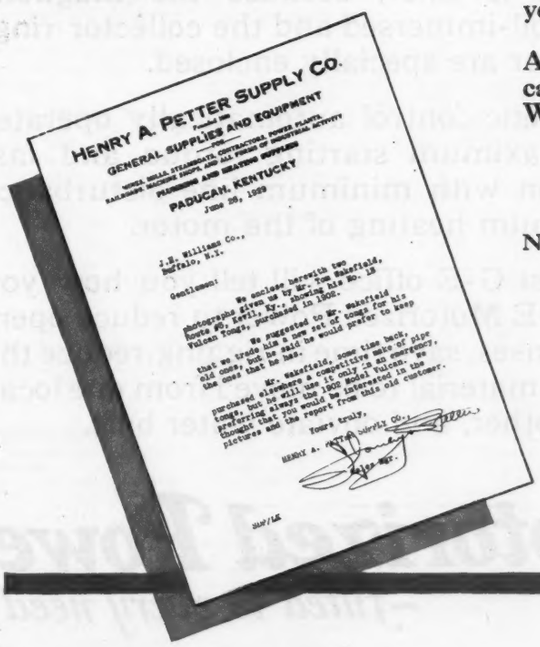
After 27 YEARS OF HARD SERVICE

From Actual Photograph Not Retouched



"Both myself and the wrench as good as we ever were," writes Mr. Tom Wakefield, owner of this veteran tongs.

This No. 13 "Vulcan" Tongs has seen daily hard service since 1902 and is still in good shape. Note the letter below.



HENRY A. PETTER SUPPLY CO.
Founded 1909
GENERAL SUPPLIES AND EQUIPMENT
SAWMILL MILLS, STEAMBOATS, CONTRACTORS, POWER PLANTS, RAILROADS, MACHINE SHOPS, AND OIL FIELDS OF INDUSTRIAL ACTIVITY
PLUMBING AND HEATING SUPPLIES
PADUCAH, KENTUCKY
June 26, 1929

J.H. Williams Co.,
Buffalo, N.Y.

Gentlemen:

We enclose herewith two photographs given us by Mr. Tom Wakefield, Route #5, Levis, Ky., showing his No. 13 Vulcan Tongs, purchased in 1902.

We suggested to Mr. Wakefield that we trade him a new set of tongs for his old ones, but he said he would prefer to keep the ones that he has.

Mr. Wakefield, some time back, purchased elsewhere a competitive make of pipe tongs, but we will use 15 only in an emergency, preferring always the 1902 Model Vulcan. We thought that you would be interested in the pictures and the report from this old customer.

Yours truly,
HENRY A. PETTER SUPPLY CO.
By _____
Vice-Pres.

HAP/LE

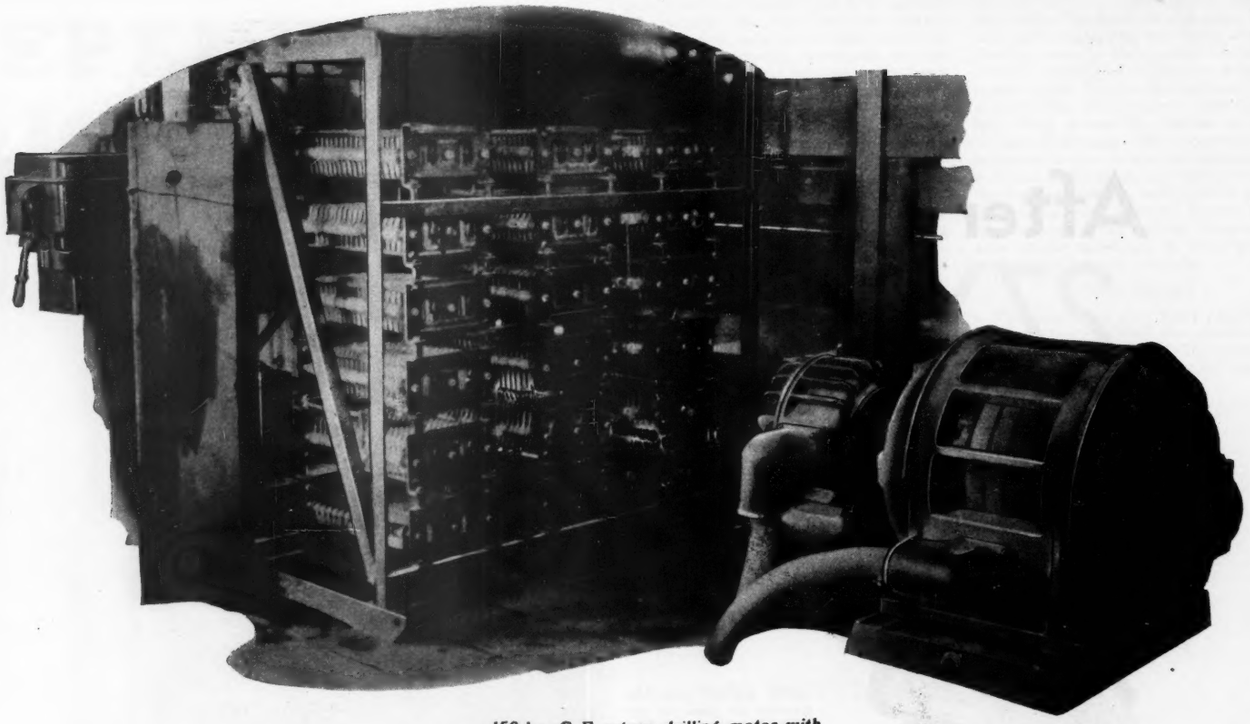
Here is a voluntary testimonial which proves conclusively (if proof be needed) the strength, stamina and long life of Williams' "Vulcan" Tongs.

After twenty-seven years of hard service, day in and day out, this No. 13 "Vulcan" is still in excellent working shape. Mr. Wakefield writes: "Looks to me as if it was good for another thirty years."

And tong users will find this performance typical of all GENUINE Williams' "Vulcans". Write for literature.

J. H. WILLIAMS & CO.
"The Wrench People"
New York BUFFALO Chicago

GENUINE WILLIAMS
SUPERIOR DROP-FORGED TOOLS
"VULCAN"
CHAIN PIPE TONGS



150-hp. G-E rotary drilling motor with oil-immersed control, Kettleman Hills Field, California

For Gassy Wells

In gassy territory, this G-E rotary drilling equipment is safer, because the magnetic control is oil-immersed and the collector rings of the motor are specially enclosed.

The magnetic control automatically operates to give maximum starting torque and fast acceleration with minimum line disturbance and minimum heating of the motor.

The nearest G-E office will tell you how you can use G-E Motorized Power to reduce operating expenses, save time in rigging, reduce the amount of material to be moved from one location to another, and obviate water bills.

General Electric supplies complete electric equipment to the oil industry. With warehouse facilities close to your operations, G.E. readily furnishes motors, controllers, transformers, arresters and other protective devices, capacitors for power-factor improvement, switching equipment, etc.

G-E oil field specialists at: Dallas, Denver, Houston, Kansas City, Oklahoma City, Tulsa, Los Angeles, San Francisco.

Motorized Power
—fitted to every need

200-304 A

GENERAL ELECTRIC

GENERAL ELECTRIC COMPANY, SCHENECTADY, N. Y., SALES OFFICES IN PRINCIPAL CITIES

BILLION BARREL MARK IN CRUDE OIL PRODUCTION HAS BEEN PASSED

By James McIntyre

The oil fields of the United States produced over 1,000,000,000 bbls. of crude oil in the past 52 weeks. It may prove when official figures are in that the billion barrels were produced from November 1, 1928, to October 31, 1929, as estimated figures for that period give a 12 months' production of 999,865,465 bbls., or a daily average over the whole period of 2,739,357 bbls.

The total production for the calendar year 1929 may easily exceed 1,015,000,000 bbls. The result of the proration movements in California, West Texas, Oklahoma and Kansas, will have much to do with the final figures on the year's output of crude, as the potential production of the country is so high as to make it possible to produce far in excess of the estimated figure.

The actual production in the United States for the 12 months ending September 30 was 989,667,068 bbls., which was 99,346,630 bbls. in excess of the same period the previous year. The estimate of 999,865,465 bbls. for the 12 months ending October 31 was 108,669,872 bbls. in excess of the production in the 12-month period ending October 31 last year.

Production in September fell off only 39,445 bbls. a day compared with that of August, which was the banner month for all time in oil production in this country. The three States, California, Texas and Oklahoma produced 2,458,814 bbls. per day in August and 2,449,791 bbls. in September, a decrease of 9,023 bbls. a day in September.

California declined 8,353 bbls. per day; Oklahoma, 10,119 bbls.; North Texas, 2,009 bbls.; West Texas, 7,808 bbls.; Texas Panhandle, 10,298 bbls.; East Central Texas, 485 bbls.; Southwest Texas, 4,206 bbls.; North Louisiana, 1,731 bbls.; Arkansas, 1,969 bbls.; Wyoming, 1,824 bbls.; Montana, 392 bbls.; and Colorado, 723 bbls. Fields that increased in daily production in September were Kansas, 2,908 bbls.; Central Texas, 2,069 bbls.; Gulf Coast 4,358 bbls.; and New Mexico, 1,237 bbls. Official figures on the Eastern fields were not available at this writing and the Eastern fields' production is estimated in the September table.

Following are the figures on production by pools in the Mid-Continent, Rocky Mountain and Gulf Coastal Fields, together with a summary by producing divisions covering the United States, for the month of September:

PRODUCTION OF THE UNITED STATES

Daily Average and Monthly Production in September, 1929.

State—	Daily av. bbls.	Month bbls.
California	870,142	26,104,264
Oklahoma	713,413	21,402,390
Texas	866,236	25,987,102
Kansas	126,023	3,780,690
Arkansas	65,324	1,959,720
Louisiana	57,275	1,718,250
Montana	11,098	332,400
Wyoming	55,092	1,652,760
Colorado	6,116	183,480
New Mexico	5,928	177,840
Eastern Fields*	140,000	4,200,000
Total September	2,916,647	87,498,886
Total August	2,956,092	91,638,961
Difference	39,445	4,140,075

*Estimated.

MID-CONTINENT FIELD

Daily Average and Monthly Production in September

Kansas	126,023	3,780,690
Oklahoma	713,413	21,402,390
North Texas	98,909	2,967,270
Central Texas	51,091	1,532,730
West Texas	366,485	10,994,567
Panhandle of Texas	118,270	3,548,100
East Central Texas	18,300	549,000
Arkansas	65,324	1,959,720
North Louisiana	34,575	1,037,250
Total September	1,592,390	47,771,717
Total August	1,621,932	50,279,942
Difference	29,542	2,508,225

OKLAHOMA

Daily Average and Monthly Production in September

	Daily av. bbls.	Month bbls.
Washington County	5,278	158,340
Nowata County	5,421	162,630
Rogers County	2,003	60,090
Osage and eastern Kay Counties:		
Burbank	18,455	553,650
Osage, outside Burb'k	25,967	779,010
Total	44,422	1,332,660
Tulsa and Wagoner Counties:		
Bird Creek, Owasso, etc.	3,569	107,070
Red Fork, Sand Springs, Turkey Mt., Bruner	1,132	33,960
Bixby, Leonard	961	28,839
Broken Arrow, Coweta	1,066	31,980
Total	6,728	201,849
Tulsa, Okmulgee and Muskogee Counties:		
Okmulgee and Beggs	2,751	82,530
Mounds	1,722	51,660
Bald Hill and Haskell	2,516	75,480
Morris, Boynton, Cole	2,122	63,660
Total	9,111	273,330
Okmulgee, Okfuskee, Seminole, Hughes and Pottawatomie Counties:		
East Seminole	8,111	243,330
Seminole City	32,186	965,580
Bowlegs	31,682	950,460
Little River	82,845	2,485,350
Earlsboro	52,749	1,582,470
East Earlsboro	47,564	1,426,920
Searight	11,513	345,390
Mission	23,779	713,370
Carr City	11,313	339,390
Maud	11,151	334,530
Total Seminole Field	312,893	9,386,790
Asher	9,078	272,340
Pearson-St. Louis	63,316	1,899,480
Sasakwa	8,675	260,250
Beebe	2,304	69,120
Henryetta, Deaner-Lyons, etc.	8,363	250,890
Wewoka	4,329	129,870
Cromwell	7,804	234,120
Papoose-Gilcrease	3,309	99,270
Jarvis-Holm	3,812	114,360
Weleetka	1,197	35,910
Wetumka	39	1,170
Yeager	463	13,890
Miscellaneous	997	29,910
Total	426,579	12,797,370
Creek and Tulsa Counties:		
Glen Pool, Jenks Kiefer	6,763	202,890
Sapulpa and Fisher	603	18,090
Cushing-Shamrock	15,365	460,950
Bristow, Kellyville and Depew	15,722	471,660
Pickett, Prairie and North Bristow	1,743	52,290
Eastern Bristow or Slick	6,082	182,460
Total	46,278	1,388,340
Pawnee County:		
Cleveland	2,512	75,360
Keystone	1,704	51,120
Jennings	2,159	64,770
Otoe	502	15,060
Ralston-Masham	157	4,710
Total	7,034	211,020
Payne County:		
Yale, Quay and Ingalls	3,704	111,120
North Cushing	2,290	68,700
South Cushing	327	9,810
Mehan-Ripley	911	27,330
Total	7,232	216,960
Oklahoma County:		
Oklahoma City	25,031	750,930
Lincoln County:		
Stroud	955	28,650
Davenport	1,798	53,940
Kendrick	262	7,860
Total	3,015	90,450
Kay, Grant and Noble Counties:		
Blackwell	940	28,200
Vernon	959	28,770
Otstot	884	26,520
Deer Creek	927	27,810
Ponca City	649	19,470
Mervine	213	6,390
Braman	3,666	109,980
Hubbard	1,733	51,990
Thomas	798	23,940
Garrett	15	450
Tonkawa	8,581	257,430
Billings	157	4,710
Miscellaneous	270	8,100
Total	19,792	593,760
Garfield County:		
Garber	5,026	150,780
Logan County:		
Lovell	947	28,410
Marshall	15,403	462,090
Total	16,350	490,500
Carter County:		
Healdton	12,712	381,360
Hewitt	8,080	242,400
Graham	2,951	88,530
Brock	584	17,520
Fox	2,352	70,560
Sholom Alechem	12,876	386,280
Total	39,555	1,186,650

(Continued on next Page)

A PERFECT CUT EVERY TIME

A "TOLEDO" Automatic Pipe Cutter never fails. You clamp the tool firmly to the pipe, give the hand-feed wheel a part turn, slip on the ratchet handle or power drive and quickly the pipe is cut off, true and accurate, leaving a straight, square-end cut, without burr.

"TOLEDO" Automatics are made in two sizes, No. 40, 2" to 4"; No. 80, 4½" to 8" and wherever large pipe must be cut off they will do the work most economically. A post card brings you complete information.

YOU CAN ALWAYS DEPEND ON THE GENUINE "TOLEDO"

THE TOLEDO PIPE THREADING MACHINE CO. Toledo, Ohio

PETROLEUM

AND

TRADING

CORPORATION

CLASS A STOCK

BOUGHT—SOLD—QUOTED

CARL H. PFORZHEIMER & CO.

(Specialists in Standard Oil and Miscellaneous Oil Securities)

25 Broad Street New York, N. Y.

RYERSON

IMMEDIATE SHIPMENT FROM STOCK

Bars, Plates, Rivets, Tool Steel, Shapes, Sheets, Bolts, Welding Rods, Structurals, Tubes, Wire, Concrete, Reinforcing, Rails, Pipe, Turnbuckles, Alloy Steel, Ascoloy, Small Tools, Machine Tools, etc.

Write for the Ryerson Journal and Stock List

JOSEPH T. RYERSON & SON Inc.

Chicago Milwaukee St. Louis Cincinnati Cleveland Detroit Buffalo New York Boston

Tulsa Office: 410 Atlas Life Bldg.

STEEL

Houston Office: D. S. Mair 505 Esperson Bldg.

A Meter for Every Kind of Service

EMCO - IRONCLAD WESTINGHOUSE

GAS METERS

Also manufacturers of Gas Regulators

PITTSBURGH EQUITABLE METER CO.
PITTSBURGH, PA.

LUFKIN

"ATLAS" TAPE

Accurate — Extra Heavy

Tapes and rules for every measuring requirement of the oil industry.

THE LUFKIN RULE CO.

SAGINAW, MICH.
WINDSOR, CAN. NEW YORK

Send for Catalog

MYERS

SELF-OILING BULLDOZER POWER PUMPS

More water per dollar invested with Myers Self-Oiling Power Pumps and Working Heads — the original patented Self-Oiling line—than is possible with old style, open gear, can oiled, cup lubricated, slow speed, power pumps. Twelve sizes for shallow service—Five sizes for deep duty. Pump hot or cold water, oil and other liquids. Supply houses, jobbers, dealers—buy through them or write us direct.

THE F.E.MYERS & BRO. CO. Ashland, Ohio.

MANUFACTURERS FOR OVER FIFTY YEARS OF MYERS "HONOR-BILT" PUMPS FOR EVERY PURPOSE • WATER SYSTEMS • HAY UNLOADING TOOLS AND DOOR HANGERS

NATIONAL PETROLEUM ENGINEERING COMPANY

Engineers & Geologists

TULSA, OKLAHOMA

APPRAISALS
REPORTS-COMMERCIAL & TAX

SURVEYS
ESTIMATES OF OIL RESERVES

AN EXPERIENCED OIL FIELD ORGANIZATION

	Daily av. bbls.	Month bbls.
Stephens and Cotton Counties:		
Loco-Milroy	1,578	47,340
Comanche	1,158	34,740
Duncan	5,266	157,980
Walters	1,856	55,680
Kilgore	378	11,340
Total	10,236	307,080
Jefferson County:		
Hambro, etc.	2,063	61,890
Township 6s-6w	243	7,290
Total	2,306	69,180
Caddo County:		
Cement	1,475	44,250
Garvin County:		
Robberson	2,145	64,350
Grady County:		
Knox	3,478	104,340
Seminole and Pontotoc Counties:		
Allen	24,715	741,450
Beckham County:		
Sayre	38	1,140
Marshall County:		
Madill	165	4,950
Total September	713,413	21,402,390
Total August	723,532	22,429,492
Difference	10,119	1,027,102

KANSAS

Daily Average and Monthly Production in September

	Daily av. bbls.	Month bbls.
Marion County:		
Florence-Urschell	653	19,590
Peabody	1,121	33,630
Covert-Sellers	485	14,550
Lost Springs	712	21,360
Davis	1,067	32,010
Total	4,038	121,140
Butler County:		
Elbing	1,995	59,850
Potwin	417	12,510
Cameron-Robinson	856	25,680
Wilson-Dunkle	1,363	40,890
Towanda	1,969	59,070
Fox-Bush	951	28,530
Nuttle-Koogler	1,587	47,610
Eldorado	7,461	223,830
Smock	161	4,830
Leon-Weaver	4,456	133,680
North Augusta	758	22,740
South Augusta	1,254	37,620
Sluss	249	7,470
Douglass	100	3,000
Keighly	603	18,090
Benton	113	3,390
Blankenship	619	18,570
Total	24,912	747,360
Greenwood and Woodson Counties:		
Sallyards	1,054	31,620
Teter-Pixley-Scott	5,064	151,920
Virgil	5,556	166,680
Thrall-Burkett	1,297	38,910
Seeley	7,609	228,270
Polhamus	824	24,720
Miscellaneous	952	28,560
Total	22,356	670,680
Cowley County:		
Rainbow Bend	1,377	41,310
Slick	520	15,600
Graham	279	8,370
Rock	171	5,130
Clark	153	4,590
Eastman	436	13,080
Winfield-New Salem	2,216	66,480
Miscellaneous	696	20,880
Total	5,848	175,440
Other counties:		
Sumner	12,997	389,910
Rooks	69	2,070
Rice	668	20,040
Russell	3,379	101,370
Reno	34	1,020
Sedgwick	37,136	1,114,080
McPherson	202	6,060
Trego	28	840
Harvey	31	930
Coffey	239	7,170
Chautauqua	3,184	95,520
Elk	1,691	50,730
Wilson	171	5,130
Montgomery	2,632	78,960
Allen	486	14,580
Neosho	503	15,090
Lyon	1,036	31,080
Miami	983	29,490
Franklin	355	10,650
Douglas	21	630
Bourbon	86	2,580
Linn	173	5,190
Anderson	1,818	54,540
Labette	21	630
Chase	12	360
Woodson	914	27,420
Total September	126,023	3,780,690
Total August	123,115	3,816,555
Difference	2,908	35,865

NORTH TEXAS

Daily Average and Monthly Production in September

	Daily av. bbls.	Month bbls.
Burkburnett	9,087	272,610
Electra	11,582	347,460
Iowa Park-K.M.A.	4,790	143,700
Archer County	18,806	564,180
Clay County	752	22,560
Wilbarger County	30,544	916,320
Montague County	6,429	192,870
Young County	6,437	193,110
Baylor County	68	2,040
Cooke County	10,196	305,880
Foard County	218	6,540
Total September	98,909	2,967,270
Total August	100,918	3,128,458
Difference	2,009	161,188

EAST CENTRAL TEXAS

Daily Average and Monthly Production in September

	Daily av. bbls.	Month bbls.
Boggy Creek	2,924	87,720
Cedar Creek	89	2,670
Currie	416	12,480
Hill County	21	630
Mexia	5,194	155,820
Minerva	630	18,900
Nigger Creek	315	9,450
Powell	7,386	221,580
Richland	326	9,780
Thrall	28	840
Wortham	971	29,130
Total September	18,300	549,000
Total August	18,785	582,362
Difference	485	33,362

CENTRAL TEXAS

Daily Average and Monthly Production in September

	Daily av. bbls.	Month bbls.
Coleman	6,780	203,400
Comanche	221	6,630
Stephens	5,764	172,920
Eastland	6,135	184,050
Brown	10,069	302,070
Callahan	3,991	119,730
Runnels	18	540
Throckmorton	640	19,200
Jack	3,758	112,740
Palo Pinto	557	16,710
Shackelford	10,031	300,930
Erath	267	8,010
Jones	2,762	82,860
Haskell	98	2,940
Total September	51,091	1,532,730
Total August	49,122	1,522,782
Difference	2,069	9,948

WEST TEXAS

Daily Average and Monthly Production in September

Field and county:	Daily av. bbls.	Month bbls.
Big Lake, Regan	17,474	524,231
Settles, Chalk, etc., Glasscock and Howard	36,780	1,103,397
Church & Fields, Crane	24,111	723,333
Connell, Ector		
Hendricks, Winkler	123,715	3,711,447
Ira, Scurry	21	636
McCamey-Taylor, Upton	8,266	247,986
McElroy, Crane	14,127	423,810
Powell, Crockett	1,795	53,846
Stephens, Fisher	1,446	43,372
Skelly, Reagan	98	2,944
Waddell, Crane	39	1,169
Westbrook and Iatan, Mitchell	2,493	74,793
Wheat, Loving	892	26,765
Yates, Pecos	133,561	4,006,822
Hazlett, Ward	660	19,797
O'Brien, Ward	1,007	30,219
Total September	366,485	10,994,567
Total August	374,293	11,603,116
Difference	7,808	608,549

TEXAS PANHANDLE

Daily Average and Monthly Production in September

County:	Daily av. bbls.	Month bbls.
Hutchinson	25,107	753,210
Carson	9,495	284,850
Gray	82,143	2,464,290
Moore	874	26,220
Potter		
Wheeler	651	19,530
Total September	118,270	3,548,100
Total August	128,568	3,985,608
Difference	10,298	437,508

NORTH LOUISIANA

Daily Average and Monthly Production in September

	Daily av. bbls.	Month bbls.
Caddo, light	10,581	317,430
Caddo, heavy	3,288	98,640
Homer	3,344	100,320
Haynesville	3,433	102,990
DeSoto-Red River	3,150	94,500
Elm Grove	524	15,720
Bellevue	623	18,690
Cotton Valley	2,318	69,540
Urania	5,954	178,620
Pleasant Hill	1,035	31,050
Sarepta-Cartersville	325	9,750
Total September	34,575	1,037,250
Total August	36,306	1,125,486
Difference	1,731	88,236

GULF COAST

Daily Average and Monthly Production in September

Texas

	Daily av. bbls.	Month bbls.
Allen	12	360
Barbers Hill	21,471	644,125
Batson	1,267	38,004
Big Creek	3,105	93,145
Blue Ridge	2,684	80,516
Brenham	405	12,160
Boling	1,378	41,345

(Continued on next Page)

FOR MORE MILES TO THE GALLON

Magnolia MAXIMUM MILEAGE Gasoline contains the greatest amount of power producing units that it is possible to completely evaporate in the combustion chamber of a motor. This is why it gives more miles per gallon. Proved by actual road test.

MAGNOLIA MAXIMUM MILEAGE GASOLINE

TO PREVENT WEAR AND PRESERVE POWER

MAGNOLIA PETROLEUM COMPANY Magnolene PARAFFINE BASE MOTOR OILS

Refined from Paraffine Base Crudes of Selected Quality from our own wells, Magnolene Motor Oils do not break down under intense heat, friction or high compression. They conform to the consistency ratings of the Society of Automotive Engineers and to the specifications of the U. S. Government. Further, they are road tested by our lubricating engineers.

TO ELIMINATE FUEL KNOCK

Due to its even-burning properties, the combustion of Magnolia ANTI-KNOCK Gasoline does not work against the up-stroke of the piston but attains its full force at the moment power should be applied to the down-stroke of the piston. It thus delivers knockless power.

MAGNOLIA ANTI-KNOCK GASOLINE

Whatever the need .... more miles per gallon .... smoother power for high compression motors and motors troubled with fuel knock .... long life for mechanical parts .... each is dependably met in some one of these proven

Magnolia Products

OBTAINABLE AT MAGNOLIA STATIONS AND DEALERS

Magnolia Fuel Oil Loading Stations at Beaumont, Corsicana, Sabine, Galveston, Fort Worth, Harbor Island, Luling, Corpus Christi, Dallas, Herma, Arkansas; Mirando.

Refineries located at Beaumont, Corsicana, Fort Worth, Luling.

Division Sales Offices at Dallas, Houston, Fort Worth, San Antonio, Oklahoma City, Little Rock, Amarillo, El Paso.

Magnolia Petroleum Company

General Offices: Dallas, Texas

Gott
Water Cans & Coolers
GOTT
Built to last... you will always be assured of a fresh supply of pure water, when you have a GOTT Water Cooler. Order one now from your supply store.
GOTT Water Cans 1½ gal; 3 gal; 5 gal; and 10 gal.
GOTT Water Coolers 3 gal; 5 gal; 8 gal; 10 gal; and 20 gal.
Gotkool
H. P. GOTT MFG. CO. • Winfield, Kansas
KEEP PURE DRINKING WATER ALWAYS HANDY

BITUMASTIC
REG. U.S. PAT. OFF
ENAMEL

This tough, dense, tenacious protective coating so increases the useful life of a buried pipe line as to pay handsome hundreds upon the original cost of the coating.

Wailes Dove-Hermiston Corporation
17 Battery Place, New York
Philtower Bldg., Tulsa
Philadelphia Cleveland Chicago Houston San Francisco

WALTER J. PODBIELNIAK—PAUL M. RAIGORODSKY
Consulting Engineers
Philtower Bldg., Tulsa, Okla. Tel. 4-7258

NATURAL GASOLINE PLANT DESIGN AND OPERATION
ANALYTICAL AND RESEARCH LABORATORIES
FRACTIONAL DISTILLATION ANALYSIS

Ask for catalog on American Pumping Units. A complete line for various depths and capacities.

C. S. CARTER, Agent
711 Mid-Continent Bldg., Tulsa, Okla.

THE AMERICAN WELL WORKS
General Offices AURORA, ILLINOIS *and Factory*

See Classified Wants on Pages 132-133

	Daily av. bbls.	Month bbls.
Clay Creek	1,933	57,975
Damon Mound	549	16,470
DeWalt	12,059	361,761
Fannette	104	3,113
Goose Creek	5,624	168,718
High Island	1,306	39,178
Hull	8,918	267,551
Humble	8,310	249,285
Jasper County	10	300
Lost Lake	715	21,453
Markham	372	11,155
Nash	422	12,670
North Dayton	483	14,503
Orange	2,773	83,184
Orchard	90	2,704
Pierce Junction	14,713	441,392
Port Neches	527	15,825
Raccoon Bend	8,265	247,958
Refugio	6,270	188,105
Saratoga	949	28,476
Sheeks	232	6,962
So. Liberty-So. Dayton	5,521	165,617
Spindletop	24,751	742,544
West Columbia	6,335	190,053
Total September	141,553	4,246,607
Total August	139,267	4,317,296
Difference	2,286	70,689

South Louisiana

Anse LaButte	58	1,740
Bayou Blue	11	330
Bayou Boullion	126	3,780
Black Bayou	52	1,560
Dog Lake	20	600
Edgerly	750	22,500
Jennings	2,180	65,400
Hackberry	4,530	135,900
Lockport	3,547	106,410
Lake Barre	77	2,310
Port Barre	143	4,290
Sorrento	100	3,000
Starks	345	10,350
Sulphur	6,331	189,930
Vinton	4,411	132,330
Sweet Lake	19	570
Total September	22,700	681,000
Total August	20,628	639,487
Difference	2,072	41,513
Total Gulf Coast Sept.	164,253	4,927,607
Total Gulf Coast Aug.	159,895	4,956,783
Difference	4,358	29,176

GULF COAST AND SOUTHWEST TEXAS
Daily Average and Monthly Production in September

	Daily av. bbls.	Month bbls.
Gulf Coast (Tex.-La.)	164,253	4,927,607
Southwest Texas	71,628	2,148,828
Total September	235,881	7,076,435
Total August	235,829	7,307,650
Difference	52	231,215

SOUTHWEST TEXAS
Dail Average and Monthly Production in September

Dale	481	14,430
Bruner	43,357	1,300,713
Branyon	79	2,364
Darst Creek	1,384	41,514
Gonzales	3	90
Kingsville	520	15,597
Larremore	163	4,890
Luling	11,025	330,756
Lytton Springs	984	29,520
McMullen County	45	1,350
Medina County	23	693
Mirando	10,653	319,590
Somerset	1,773	53,181
Yoast	1,138	34,140
Total September	71,628	2,148,828
Total August	75,834	2,350,867
Difference	4,206	202,039

ARKANSAS
Daily Average and Monthly Production in September

	Daily av. bbls.	Month bbls.
El Dorado	4,593	137,790
Smackover, light	5,916	177,480
Smackover, heavy	45,689	1,370,670
Stephens	990	29,700
Nevada County	988	29,640
Lisbon	1,234	37,020
Champagnolle	5,830	174,900
Bradley	84	2,520
Total September	65,324	1,959,720
Total August	67,293	2,086,083
Difference	1,969	126,363

WYOMING
Daily Average and Monthly Production in September

	Daily av. bbls.	Month bbls.
Big Muddy	2,159	64,770
Oregon Basin	5,286	158,580
Byron	.....	.....
Dution	46	1,380
Elk Basin	768	23,040
Ferris	22	660
Grass Creek	2,029	60,870
Greybull	11	330
Hamilton	1,017	30,510
LaBarge	2,271	68,130
Lance Creek	207	6,210
Lost Soldier	3,851	115,530
Mule Creek	522	15,660
Osage	576	17,280
Poison Spider	1,020	30,600
Rock Creek	2,228	66,870
Rex Lake	55	1,650
Lander	509	15,270
Salt Creek	32,219	966,570
Simpson Ridge	53	1,590
Frannie	209	6,270
Teapot Dome	33	990
Total September	55,092	1,652,760
Total August	56,916	1,764,396
Difference	1,824	111,636

MONTANA
Daily Average and Monthly Production in September

	Daily av. bbls.	Month bbls.
Cat Creek	1,322	39,660
Kevin-Sunburst	6,767	203,010
Pondera	2,989	89,670
Lake Basin	20	60
Total September	11,098	332,400
Total August	11,490	356,190
Difference	392	23,790

COLORADO
Daily Average and Monthly Production in September

	Daily av. bbls.	Month bbls.
Craig	1,074	32,220
Fort Collins	2,048	61,440
Florence	837	25,110
Iles	1,596	47,880
Tow Creek	440	13,200
Miscellaneous	121	3,630
Total September	6,116	183,480
Total August	6,839	212,009
Difference	723	28,529

NEW MEXICO
Daily Average and Monthly Production in September

	Daily av. bbls.	Month bbls.
Artesia	789	23,670
Cap Rock (Maljamar)	643	19,290
Lea and Eddy	2,314	69,420
Hogback	313	9,390
Rattlesnake	1 753	52,590
Table Mesa	116	3,480
Total September	5,928	177,840
Total August	4,691	145,421
Difference	1,237	32,419

CENTRAL WEST FIELDS

(Continued from Page 78)

Wesley Genheimer, Section 21, Chester Township. H. F. McTaggert and others have a light gas well in No. 3 Frank Halliday, Section 18, Rutland Township, in the Maxon sand from 633 to 660 feet. F. Leihert and others have an average gas well on the Frank A. Hawk and others' farm, Section 36, Salisbury Township, in the Second Cow Run sand from 505 to 562 feet.

In Vinton County, Knox Township, the Co-operative Oil Co. is drilling No. 4 Cameron Clark, Section 3.

In Tuscarawas County, Washington Township, the Gordon Oil Co. made a location of the Thomas B. and Rosie Shearer, Section 34, and the Smetts Oil and Gas Co., is drilling a second test on the G. H. Smitts, Lot 35 same township. In Guernsey County, Spencer Township, the Ohio Fuel Gas Co. has a light gas well in No. 1-4863 on the Charles D. Kackley, Section 36, from the Berea sand from 1,339 to 1,347 feet. In Wheeling Township, the Capital Drilling Co. made a location for two tests, one on the Oscar A. Quillan, Section 1 and for No. 1 on the J. M. McFadden, Sections 1 and 2. East Ohio Gas Co. made a location for No. 4 E. C. Quillan, Section 11, and is drilling No. 3 same farm. North Salem Oil & Gas Co. made a location for No. 5 on the C. and A. Gray, same section. Ohio Fuel Gas Co. is drilling No. 1-4842 Amanda E. Robinson, same section.

In Belmont County, Frank Stranges made a location for No. 4 C. C. and W. Sheperd, Section 21, Union Township.

In Pike County, the A. & P. Oil & Gas Co. is drilling No. 1 D. and D. Stewart farm, Section 31, Beaver Township.

Morgan County

In Morgan County, Marion Township, Williams Brothers got a fair gas well in No. 6 on the Curtis M. Ellis farm, Lot 4, from the Salt sand from 726 to 770 feet. Ohio Fuel Gas Co. is drilling No. 2-4778 F. J. Strode, Section 30, and made a location for No. 3 on the Hugh Ellis, Lot 4, same township. In Penn Township, Henning Brothers have a light gas well in No. 13 on the Ezra McDaniels, Section 15, in the lower Berea sand from 1,602 to 1,624 feet, total depth, 1,627 feet. Ohio Fuel Gas Co. made a location on the Charles Harkins, Section 2. In Union Township, the Buck Run Oil Co.'s No. 20 on the John A. and

"REPUBLIC" *The* BUYING GUIDE FOR QUALITY PIPE

There are many good American names that are guideposts in every line of endeavor—names which, when mentioned, immediately bring to mind accomplishment, progress, or leadership.

Lincoln—Hill—Edison—Ford—Lindbergh... they will always stand as measures of achievement in their fields.

"Republic," like other significant names, is a proven guide in the steel pipe industry—a buying guide to quality steel pipe for the oil and gas fields.

PRODUCTS
Tubing
Casing
Line *and*
Rotary
Drill Pipe

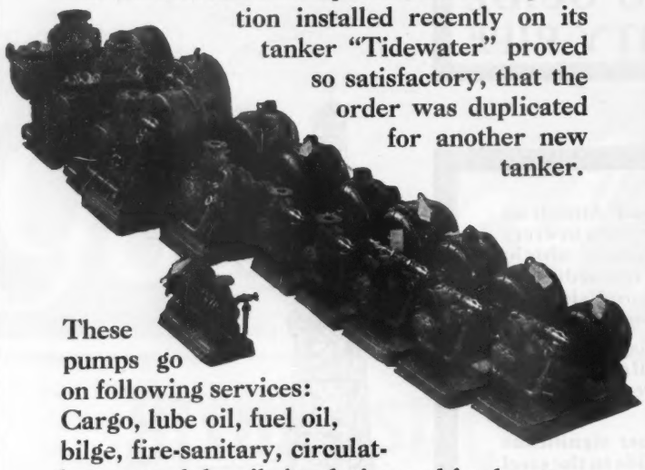
REPUBLIC
IRON & STEEL CO. YOUNGSTOWN O.
PIPE & CASING

Branch Offices

Birmingham, Boston, Buffalo, Chicago, Cincinnati, Cleveland, Dallas, Denver, Detroit, El Paso, Los Angeles, New York, Philadelphia, Pittsburgh, San Francisco, Seattle, St. Louis

Tidewater Oil Co. again orders Northern Cargo Pumps for New Tanker

The ten Northern Pumps which this corporation installed recently on its tanker "Tidewater" proved so satisfactory, that the order was duplicated for another new tanker.



These pumps go on following services: Cargo, lube oil, fuel oil, bilge, fire-sanitary, circulating water, lube oil circulating and fresh water.

NORTHERN PUMP CO.
MINNEAPOLIS, MINN.
OFFICES IN ALL PRINCIPAL CITIES

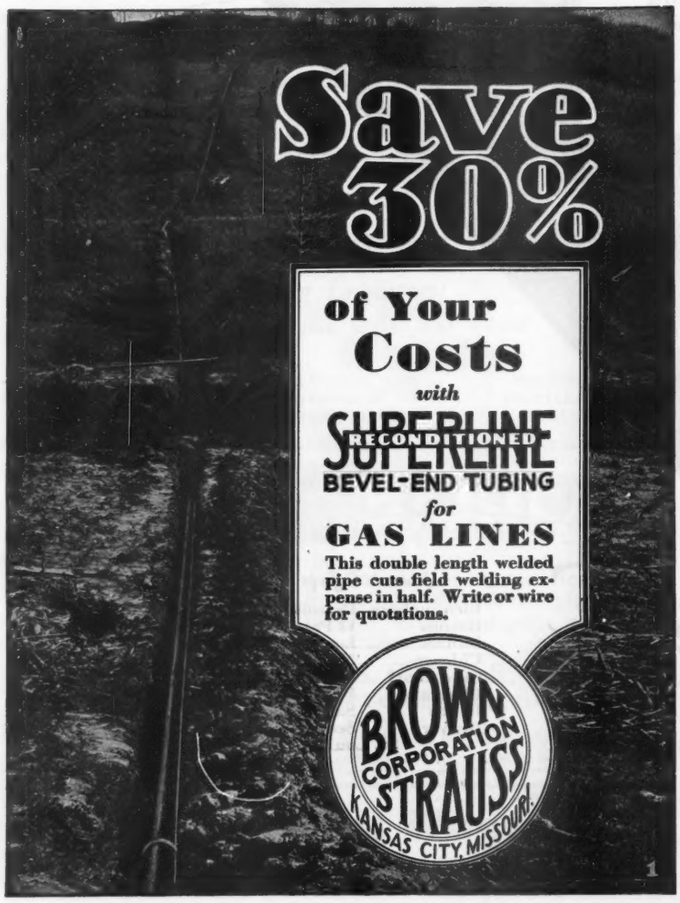
THE NATURAL WATERPROOFING

VALDURA is known as the World's Supreme Waterproofing. Any waterproof paint lasts longer than ordinary paint. That's why VALDURA ASPHALT PAINT lasts so long — it's absolutely waterproof.

VALDURA is made from Gilsonite Asphalt—no coal tar. You get better satisfaction when you buy VALDURA — not only better service — but longer service and at a moderate price.

If you want a paint to protect — to keep out moisture, you can't beat VALDURA.

Made and Guaranteed by
AMERICAN ASPHALT PAINT CO.
Distributed by
NATIONAL SUPPLY COMPANIES



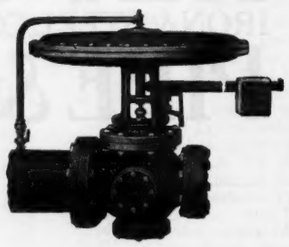
On the Job— CF ALWAYS

The Chaplin-Fulton Automatic Cut-Off is on the job at all times. It automatically closes the ports of the regulator valve. The valves must be opened by hand before the gas flow resumes.

There is no chance for dangerous explosions, because even though the diaphragm of the regulator should burst, this cut-off would stop the flow of gas immediately.

The Chaplin-Fulton Mfg. Co.
28-40 Penn Ave. Pittsburgh, Pa.

More than 45 years of experience in controlling gas pressure has taught us how to make this device dependable in its operation.



Organized 1884—Oldest builders of regulators in the country. Built in all sizes from 1 to 24 inches; for all services 1 oz. up to 1,600 lbs. pressure per square inch.

One Piece Drop Forged Jaws giving full support for small size pipe.

Drop Forged Steel Handle. Alloy Steel Screw. Proof-tested Chain.

ARMSTRONG BROS.

CHAIN PIPE VISE

This famous Vise combines maximum capacity with minimum weight. Can be easily carried in tool bag and attaches anywhere.

Write for Catalog P-10.

ARMSTRONG BROS. TOOL CO.
330 N. Francisco Ave., Chicago, U. S. A.

Goodman Cylindrical Stopper for GAS, OIL, WATER DRAIN PIPES

Safety Gas Main Stopper Co
523 Atlantic Ave.
Brooklyn, N. Y.

ARTHUR C. BROWN
SOLICITOR OF UNITED STATES AND FOREIGN PATENTS
412 KENNEDY BLDG
Tulsa, Okla.
Mr. Fred Krueger in charge
Phone 4-2319

TEXAS OIL MAPS
County and District Catalog on Application
HEYDRICK MAPPING COMPANY
Wichita Falls, Texas

Chester W. Washburne
Geologist and Engineer
27 William St., N. Y.

PATENTS *Write for Free Book*
MUNN & CO.
Associated since 1846 with the Scientific American
514 Scientific American Bldg., *Washington*, D. C.
1551 Scientific American Building
24 West 40th Street, *New York City*
1303 Tower Building, *Chicago, Ill.*
656 Hobart Building, *San Francisco, Calif.*
511 Van Nuys Bldg., *Los Angeles, Calif.*

GEORGE STEINER
GEOLOGIST
Sole representative of the original Eotvos and Rybar Torsion Balances for America
Petroleum Bldg., Houston, Texas

Always Renew Your Subscription Promptly

Amanda Rouanzoin, Section 2, pumped 5 bbls. initial from the first Cow Run sand from 152 to 168 feet, total depth, 170 feet. In York Township, the Ohio Fuel Gas Co. is drilling No. 2-4853 on the R. S. Colegrove, Section 24.

INDIANA

Three completions were reported from the Indiana Field since the last review. A. B. Bement's No. 3 well, 1,050 feet from the south line and 660 from the west line of the W. H. Shawhan farm, SE, location 18, Clay Township, Pike County, produced an initial of 18 bbls. from 926-47 feet. Charles C. Taliaferro, Jr., drilled in No. 4 well, 500 feet from the north line and 750 from the west line of the Della Kime farm, SW, location 12, same township, the well doing 10 bbls. initial from 1,110 to 1,144 feet. Same party is starting a test on the Mary McAtee, also in location 12, Clay Township. William Bell and others are drilling on the Berkley Hill farm, location 31. F. B. Hillis, trustee, is at work on a second test on the W. H. Lindy farm, also in location 31, and the Texana Oil Co. has shut down for orders on the John Ford farm, location 9, same township. In Logan Township, the Wiser Oil Co. is drilling No. 2 on the Everette Loveless, Section 23, and O. L. Diver is starting a test on the Robert Walton farm, Section 14, same township.

In Gibson County, Barton Township, Mann & Huber's test, 200 feet from the south line and 660 from the west line of the Tom Fenner farm, NE, Section 5, developed into a duster. United Oil Corp. is drilling a second test on the Eliza M. Harper, Section 8, same township. Texana Oil Co. is drilling on the L. W. Gudgell farm, Section 25, Columbia Township, same county.

In Daviess County, Veale Township, Ross and others are drilling on the Ross farm, Section 22, and Reicher and others are drilling on the National City Bank property, Section 16.

Arrangements are reported being made for the drilling of a couple of tests near the town of Brooklin in the south-central part of Newton County, in the Kankakee Valley area of western Indiana, southwest of the old shallow natural lubricant oil field of Jasper County, west of Medarysville.

ILLINOIS

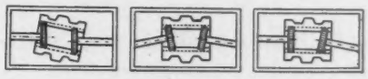
According to reports there are still 33 strings of tools running in the Dupo Field, south of East St. Louis, in St. Clair County, Illinois. This is shallow territory where the oil is found in the Trenton lime formation. Hundreds of wells during the past few months have been drilled on town lots, but the wells are getting so thick that many of the operators are testing out acreage as nearly every available town lot has its well.

In the Dupo Field, in Sugar Loaf Township, Sanders and others' No. 1 on the Fred Eckert property, SW, Section 34, pumped 25 bbls. initial from 692 to 733 feet. Pilot Oil Co.'s No. 1 on another Fred Eckert property, same section, produced 25 bbls. from 731 to 774 feet, while the H. & M. Operating Co.'s No. 1 on another property owned by Fred Eckert, same section, pumped 30 bbls. from 706 to 748 feet. Same company's No. 1 on the K. Reichert property, NW, Section 3, same township, pumped 30 bbls. from 746 to 782 feet. Ellis and Thomas, of Owensboro, Ky., operating in the Dupo Field, drilled in their No. 3 H. Monsette, in the NE, Section 28, which produced 35 bbls. from 472 to 523 feet. This was formerly the Morris & Yeager holdings. Ellis & Thomas completed No. 2 on the Margaret LaCroiz, SE, Section 21, in the town lot plat, which produced 35 bbls. from 467 to 545 feet, and their No. 1 on the J. Edward Yoch, also in Section 21, pumped but 4 bbls. from 521 to 583 feet. This well is at East Carondalet in the southeast corner of the James A. Hamill farm, between two railroads, and in Section 21.

In Lawrence County, Bridgeport Township, the Big Four Oil and Gas Co. is drilling No. 25 J. M. Buchannan farm, Section 7. Treat-Hays Oil Co. is drilling No. 2 Tom Potts, Section 20, Dennison Township, and Charles Blosser and others are drilling No. 2 Charles Gillespie farm, Section 1, same township.

Get this Book

Stop future shut-downs for coupling repairs by getting this free book on why eliminating flexible materials eliminates failure of couplings.

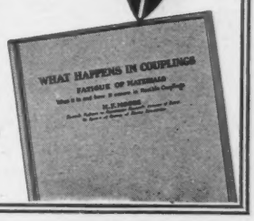


Two spur gears, one on each shaft end, are completely and continuously meshed in oil with the internal gears of a floating sleeve. The shafts and sleeve revolve noiselessly as one unit, allowing free angular and lateral movement.

FAST'S COUPLING
— Self-Aligning —

IT'S FREE

Send post card today for Free Book
By Prof. Moore, *University of Illinois*
National Authority on Fatigue of Materials

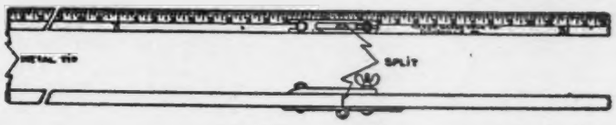


The BARTLETT HAYWARD CO.
218 Scott Street - BALTIMORE, MD.

Oil Field Representatives:
Houston - - - M. N. Dannenbaum
Los Angeles - Thomas Machinery Co.

GAUGE POLES

Any Length For Oil Measurements



"MARSH-JOINT"

For sale by oil country supply houses or furnished promptly by the factory at Titusville, Pa.

Correspondence Solicited

MARSH GAUGE POLE COMPANY
TITUSVILLE, PA.

McGregor Working Barrel Company, Inc.
Bradford, Pa.

Manufacturers of the McGregor Working Barrel for all size tubing in brass or steel in all lengths; Standard Steel Barrels for 2", 1½" and 1¼" tubing in all lengths, Brass, ditto; Cast Iron Barrels for 2" tubing; all size working valves, standing valves, two cup drop valves and the MAC Steel, Brass, Bronze and Stainless Steel Balls and Seats in all sizes.

All barrels are guaranteed to have a nice smooth working barrel finish on the inside.

CRANE CAST STEEL AND FORGED STEEL ARE SUPER-STRONG VALVE METALS

CRANE

THEY SAFELY CONTROL HIGHEST PRESSURES AND TEMPERATURES

Oklahoma-Kansas and Eastern Pipe Line Report

OKLAHOMA-KANSAS PIPE LINE STATEMENT FOR SEPTEMBER

Runs

	Month	Dy. av.
Prairie P. L. Co.*	5,100,000	170,000
Gulf P. L. Co.	2,146,332	71,544
Texas P. L. Co.	779,039	25,968
Magnolia P. L.	1,967,530	65,584
Empire P. L. Co.	1,704,033	56,801
Cosden P. L.	841,285	28,043
Sinclair P. L. Co.*	3,066,000	102,200
Oklahoma P. L. Co.	3,361,011	112,034
Other lines*	6,217,500	207,250
Total September	25,182,730	839,424
Total August	26,253,728	846,894
Difference	1,070,998	7,470

Shipments

	Month	Dy. av.
Prairie P. L. Co.†	6,552,482	218,416
Gulf P. L. Co.	1,899,684	63,323
Texas P. L. Co.	1,251,480	41,716
Magnolia P. L. Co.	2,198,026	73,268
Empire P. L. Co.	1,481,630	49,388
Cosden P. L. Co.	827,229	27,574
Sinclair P. L. Co.†	3,320,879	110,696
Oklahoma P. L. Co.	3,250,403	108,347
Other lines*	6,300,000	210,000
Total September	27,081,813	902,728
Total August	28,695,007	925,645
Difference	1,613,194	22,917

Stocks

Prairie O. & G. Co.	37,600,000
Gulf P. L. and Gypsy Oil	10,237,633
The Texas Company	7,969,471
Magnolia Petroleum Co.	9,423,863
Empire P. L. Co.	5,219,647
Mid-Continent Pet. Co.	3,319,518
Sinclair Crude Oil Pur. Co.	20,340,000
Carter Oil Co.	10,089,102
Oklahoma Pipe Line Co.	3,443,542
Other crude stocks*	27,000,000
Total September	134,642,776
Total August	134,563,144
Difference	79,632

*Estimated. †Prairie and Sinclair shipments include crude oil produced in Texas.

EASTERN PIPE LINE REPORTS

Runs From Wells

In the following table will be found the regular receipts from wells by various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for August and September:

	Aug. '29	Sept. '29
Nat Transit	307,546.82	294,748.89
S W Pa P L	92,316.86	89,643.06
Eureka P L	373,176.67	357,703.92
Buckeye P L (Macksburg)	334,947.96	331,438.55
Buckeye P L (Cleve)	13,069.95	10,770.51
Buckeye P. L (Lima, etc.)	130,364.10	103,534.37
Indiana P L	5,572.79	5,270.40
Cumberland P L	197,780.44	188,201.35
N Y Transit	31,452.26	30,538.20
Tide Water P L	280,916.87	59,187.70
Pure Oil	207,822.79	240,830.38
Emery P L	73,262.76	
Paragon Dev	13,721.38	13,427.85
Stoll Oil Ref	5,334.49	4,327.52
Bradford Tran	[illegible]	289,323.57
Total	2,067,286.14	2,019,446.57
Daily avg.	66,686.68	67,314.88

Note—Indian Refining Co. also reported other receipts of 451,348.24 bbls. Paragon Refining Co. had other receipts of 169,175.56 bbls. Paragon Development had other receipts of 507.72 bbls.

Petroleum Deliveries

The following tables exhibit the shipments or regular deliveries of various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky for August and September:

	Aug. '29	Sept. '29
Nat Transit	433,226.88	502,982.89
S W Pa P L	360,915.13	354,433.46
Eureka P L	282,805.08	230,056.08
Buckeye P L (Macksburg)	185,208.11	234,242.65
Buckeye P L (Cleve)	2,185.04	2,182.54
Buckeye P L (Lima, etc.)	1,593,076.04	1,632,220.66
Indiana P L	1,426,167.56	1,379,905.31
Cumberland P L	201,459.97	208,727.10
Southern P L	36,341.20	92,625.44
N Y Transit	290,004.27	279,908.63
Northern P L	192,966.11	168,857.71
Tide Water P L	249,359.87	211,086.95
Pure Oil	214,822.99	248,121.86
Emery P L	75,477.85	
Paragon Ref	174,796.43	170,090.96
Paragon Dev	14,507.08	12,326.20
Bradford Tran	[illegible]	308,652.35
Total	5,733,319.61	6,036,420.79
Daily avg	184,945.79	201,214.02

Indian Refining Co. reported other deliveries of 362,506.75 bbls.

Gross Stocks

The gross stocks held by various pipe lines in the oil producing sections of New York, Pennsylvania, West Virginia, Ohio, Indiana and Kentucky at the close of August and September:

	Aug. '29	Sept. '29
Nat Transit	689,249.61	654,825.92
S W Pa P L	551,844.06	556,527.00
Eureka P L	1,338,075.04	1,415,789.95
Buckeye P L (Macksburg)	434,154.83	394,708.80
Buckeye P L (Cleve)	58,890.03	56,858.66
Buckeye P L (Lima)	2,721,519.25	2,860,912.26
Indiana P L	668,771.87	575,104.03
Cumberland P L	556,916.14	539,326.53
Southern P L	399,390.51	387,726.89
N Y Transit	201,133.36	167,745.27
Northern P L	433,718.68	365,819.17
Tide Water P L	1,028,430.16	955,021.33
Pure Oil	16,303.76	15,318.69
Emery P L	10,275.09	
Paragon Ref	11,989.49	10,799.07
Indian Ref	50,525.66	141,337.05
Paragon Dev	4,645.76	6,461.28
Tuscarora	264,809.29	265,097.04
Bradford Trans.	[illegible]	73,688.01
Total	9,440,642.59	9,443,066.95
Increase	229,047.24	2,424.36

Grades of Oil

The following table shows the amount of the different grades of oil held by the Eastern Pipe Lines at the close of August and September showing the gross stocks of the above fields:

Penn'a	3,279,178.01	3,341,064.05
Lima	648,102.38	574,215.23
Kentucky	767,210.90	713,582.53
Mid-Cont	4,457,893.11	4,519,635.67
Illinois	288,258.19	294,569.47
Total	9,440,642.59	9,443,066.95

Daily Average Runs

The following table shows the daily average runs of the Pennsylvania, Lima and Kentucky oil fields for the past four years:

	1926	1927	1928	1929
Jan.	55,630	56,209	52,904	51,749
Feb	60,394	61,298	57,002	51,833
Mar.	61,644	63,247	57,485	54,252
April	63,019	60,927	56,812	58,444
May	60,580	60,284	62,067	59,902
June	61,121	62,757	58,230	58,833
July	63,206	58,674	57,144	66,087
Aug.	61,815	60,870	57,745	66,687
Sept.	64,639	60,285	53,487	67,315
Oct.	161,132	147,080	58,100	.....
Nov.	67,774	57,275	53,565	.....
Dec.	58,755	53,089	52,025	.....

Daily Average Shipments

The following table gives daily average shipments from the Pennsylvania, Lima and other fields for the past four years:

	1926	1927	1928	1929
Jan.	156,056	141,227	146,465	165,721
Feb.	159,488	138,534	167,368	159,387
Mar.	150,239	133,777	158,883	161,474
April	152,374	140,227	172,935	169,737
May	160,998	144,594	180,559	184,281
June	160,267	149,772	188,024	185,404
July	160,045	151,850	189,470	194,763
Aug.	151,929	188,653	192,853	184,946
Sept.	158,915	144,213	194,138	201,214
Oct.	161,132	147,036	176,000	.....
Nov.	172,608	150,975	176,898	.....
Dec.	136,428	144,540	173,572	.....

Gross Stocks

In the following table will be found the gross stocks of the various lines of the Pennsylvania, Lima and Kentucky oil fields, including oil received from other lines at the close of each month for the past three years:

	1927	1928	1929
Jan.	9,718,008	12,276,710	7,596,564
Feb.	10,119,162	12,180,419	8,738,835
Mar.	10,794,044	12,239,725	9,002,058
April	11,112,295	11,740,125	8,978,172
May	11,359,381	11,602,468	8,903,560
June	11,493,673	11,287,678	8,921,275
July	11,458,128	10,819,331	9,211,595
Aug.	11,989,115	10,236,743	9,440,643
Sept.	12,312,716	9,660,910	9,443,067
Oct.	12,047,661	9,229,709	.....
Nov.	11,939,740	8,366,553	.....
Dec.	12,340,297	7,539,555	.....

Franklin Pipe Co.

The following table exhibits the condition of the Franklin Pipe Line at the close of business for the months named and not counted in the stocks and averages reported above:

1928—	Runs	Shipments	Stocks
Sept.	2,820.31	5,255.42	15,285.93
Oct.	1,289.93	538.89	17,551.93
Nov.	2,663.53	788.47	19,426.99
Dec	3,053.60	3,167.53	19,426.99
1929 —			
Jan.	2,099.90	.....	19,313.06
Feb.	2,469.47	6,873.20	17,009.23
Mar.	3,330.82	3,595.01	16,745.04
April	4,864.07	4,243.59	17,365.52
May	2,688.59	2,455.54	17,598.57
July	2,947.62	3,329.35	4,503.48
Aug.	2,742.73	2,889.47	4,356.74
Sept.	2,925.71	2,897.34	4,385.11

The Illinois Field

The following table gives the report of the Illinois Pipe Line Co. in Illinois.

Gross stocks, Oct. 1	2,269,619.32
Runs from wells	556,002.64
Other receipts	301,231.34
Regular deliveries	637,220.53
Other deliveries	367,614.72

The amount of Illinois oil run by the Tidewater Pipe Co. in September was 26,455.02 bbls. Deliveries were 32,727.19 bbls. Adding these figures to those of the Illinois Pipe Line Co. makes the runs and deliveries as follows:

1928—	Runs	Deliveries
Oct.	626,147.64	626,290.40
Nov.	576,332.88	702,589.93
Dec.	584,633.00	491,517.26
1929—		
Jan.	570,727.38	545,084.66
Feb.	517,330.17	503,387.70
Mar.	728,319.67	586,949.60
April	515,374.27	654,297.96
May	608,981.60	673,812.83
June	568,454.70	818,845.97
July	611,106.79	828,159.44
Aug.	625,351.99	746,425.06
Sept.	582,457.66	669,947.72

Tidewater Pipe Co., Ltd., also delivered in September, 268,016.93 bbls. Oklahoma oil.

AVERAGE DAILY RECEIPTS OF CALIFORNIA OIL AT ATLANTIC AND GULF COAST PORTS

Average bbls. per day—	ATLANTIC PORTS						GULF COAST PORTS					
	Baltimore	Boston	New York	Philadelphia	Others	Total	Galveston	New Orleans Baton Rouge	Port Arthur Sabine Pass	Tampa	Total	Total all ports
February	14,214	.....	38,750	17,250	11,607	81,821	.....	.....	.....	.....	3,750	85,571
March	19,903	968	31,258	18,581	7,355	78,065	.....	.....	.....	.....	.....	78,065
April	16,667	.....	33,333	13,233	2,234	64,467	.....	.....	.....	.....	7,333	65,200
May	16,226	2,416	31,326	10,806	2,129	62,903	.....	.....	.....	.....	.....	62,903
June	14,866	3,167	23,100	10,300	6,100	57,533	.....	.....	.....	.....	.....	57,533
July	15,387	4,806	34,290	19,388	2,452	76,323	.....	.....	.....	.....	4,161	30,484
August	20,389	3,129	35,226	18,903	5,548	83,194	.....	.....	.....	.....	12,161	95,355
September	19,433	.....	31,834	11,900	6,200	69,367	.....	.....	.....	.....	4,800	74,167

AVERAGE DAILY IMPORTS OF PETROLEUM AT PRINCIPAL UNITED STATES PORTS

Average bbls. per day—	ATLANTIC PORTS						GULF COAST PORTS					
	Baltimore	Boston	New York	Philadelphia	Others	Total	Galveston	New Orleans Baton Rouge	Port Arthur Sabine Pass	Tampa	Total	Total all ports
February	13,750	15,071	135,179	32,750	17,893	214,643	.....	34,357	821	143	35,321	249,964
March	18,548	26,064	145,516	39,162	28,162	257,452	.....	42,581	2,322	.....	44,903	302,355
April	19,733	18,367	137,233	50,267	22,567	248,167	6,367	25,066	10,367	1,500	43,800	291,967
May	29,806	19,258	138,000	49,936	22,322	259,322	6,677	26,323	3,000	1,323	37,323	296,645
June	31,433	8,667	134,600	42,967	18,300	235,967	8,600	22,633	11,800	2,033	45,066	281,033
July	40,097	15,129	111,677	43,420	31,516	241,839	4,774	12,097	9,516	161	26,548	268,387
August	33,387	14,355	162,644	30,936	20,355	261,677	4,226	12,742	.....	1,484	18,452	280,129
September	32,967	9,000	136,633	54,300	32,900	265,800	6,900	22,900	5,367	1,333	36,500	302,300

GROSS PRODUCTION IN THE UNITED STATES FOR 12 MONTHS (REVISED)

(In Barrels of 42 gallons)

1928-29		California	Oklahoma	Texas	Kansas	Arkansas	Louisiana	Rocky Mts.	Eastern	Total
October:	Month	19,430,992	23,431,071	22,176,853	3,058,460	2,652,484	1,836,221	2,571,822	3,612,000	78,769,903
	Daily average	626,806	755,841	715,376	98,660	85,564	59,233	82,962	116,516	2,540,964
November:	Month	19,907,526	22,078,680	20,791,798	2,977,800	2,476,080	1,801,914	2,388,870	3,348,000	75,770,668
	Daily average	663,584	735,956	693,059	99,260	82,536	60,064	79,629	111,600	2,505,689
December:	Month	21,574,705	22,425,723	22,180,102	2,988,400	2,521,571	1,846,841	2,289,040	3,581,000	79,407,379
	Daily average	695,958	723,410	715,487	96,400	81,341	59,576	73,840	115,516	2,561,528
January:	Month	23,385,939	22,575,874	23,412,226	2,861,641	2,463,526	1,807,887	2,076,070	3,439,000	82,012,163
	Daily average	754,385	728,254	755,233	92,311	79,146	58,318	66,970	110,936	2,645,554
February:	Month	22,300,707	20,464,164	20,816,209	2,557,968	2,154,194	1,569,930	1,965,656	3,113,000	74,941,228
	Daily average	796,454	730,863	743,484	91,356	76,936	56,068	70,202	111,184	2,676,472
March:	Month	24,324,729	20,838,263	24,358,592	2,951,076	2,303,724	1,756,153	2,195,823	3,586,000	82,314,359
	Daily average	784,669	672,202	785,761	95,196	74,314	56,650	70,838	115,677	2,655,302
April:	Month	23,295,060	20,235,390	23,493,097	3,112,740	2,188,680	1,702,479	2,085,030	3,524,000	79,636,376
	Daily average	776,502	674,513	783,103	103,758	72,956	56,750	69,501	117,467	2,654,546
May:	Month	24,052,351	21,345,453	24,489,101	3,665,099	2,200,158	1,713,261	2,252,522	3,879,000	83,617,945
	Daily average	775,915	688,563	789,965	118,229	71,618	55,267	72,662	125,129	2,697,353
June:	Month	24,624,627	20,561,112	24,698,029	3,636,150	2,112,270	1,699,581	2,180,752	3,887,000	83,399,521
	Daily average	830,321	685,371	823,267	121,205	70,337	56,653	72,692	129,567	2,779,984
July:	Month	26,796,627	22,371,925	26,969,989	3,867,157	2,137,047	1,716,488	2,360,836	4,439,200	90,659,730
	Daily average	864,407	721,675	869,997	124,747	68,937	55,370	76,156	143,200	2,924,489
August:	Month	27,233,353	22,429,492	27,490,489	3,816,555	2,086,083	1,764,973	2,478,016	4,340,000	91,638,961
	Daily average	878,495	723,532	886,787	123,115	67,293	56,934	79,936	140,000	2,956,092
September:	Month	26,104,264	21,402,390	25,987,102	3,780,690	1,959,720	1,718,250	2,346,480	4,200,000	87,498,896
	Daily average	870,142	713,413	866,236	126,023	65,324	57,275	78,234	140,000	2,916,647
	Total 12 months	283,031,878	260,159,435	286,863,587	39,273,736	27,265,537	20,933,978	27,190,917	44,948,000	989,667,068

Smooth Working Wins—

Smoothness in the execution of plays makes the successful football team. Smooth working enables the Gaso Figure 1508 Power Pump to deliver maximum capacity with a minimum consumption of power and with a minimum of wear.

Unusual smoothness of operation in this pump is insured by Timken roller main and pinion bearings, continuous tooth Herringbone gears, and automatic lubrication of all working parts with a bath of clean oil.

Ask for detailed information on Gaso Pumps for any purpose.

GASO PUMP & BURNER MFG. CO.
Tulsa, Oklahoma

210 Petroleum Bldg., Fort Worth, Texas

535 Fifth Avenue, New York, N. Y.

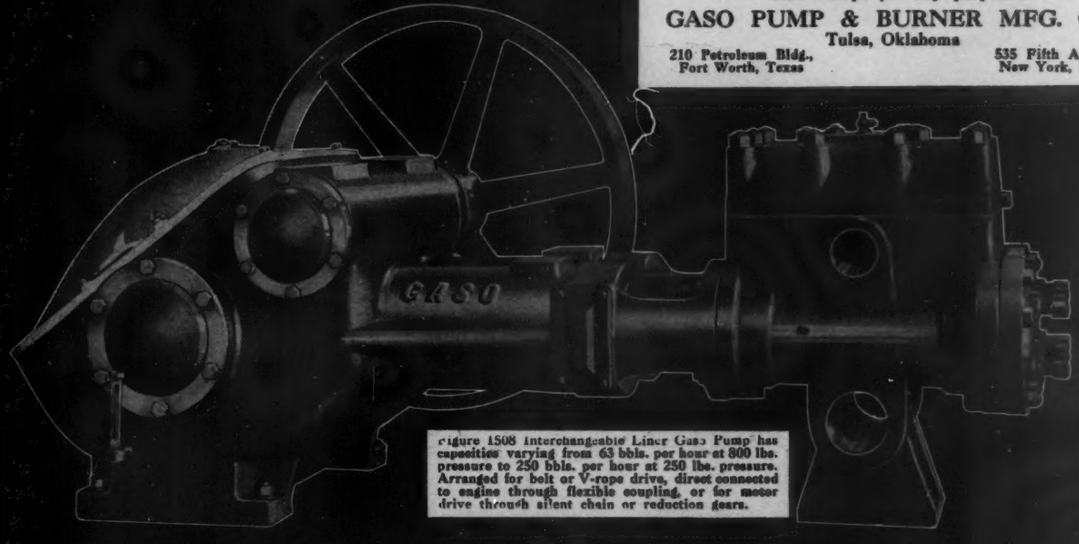


Figure 1508 Interchangeable Liner Gaso Pump has capacities varying from 63 bbls. per hour at 800 lbs. pressure to 250 bbls. per hour at 250 lbs. pressure. Arranged for belt or V-rope drive, direct connected to engine through flexible coupling, or for motor drive through silent chain or reduction gears.

GASO PUMPS

for every oil industry need

No history of the Rotary Method of Drilling would be Complete without the Story of the Design, Perfection and Performance of ~

HUGHES ROCK BITS

HUGHES TOOL COMPANY

Service Plants:
Los Angeles, Calif.
Oklahoma City, Okla.

Main Office and Plant:
HOUSTON,
TEXAS

Export Office:
Woolworth Bldg.
New York City